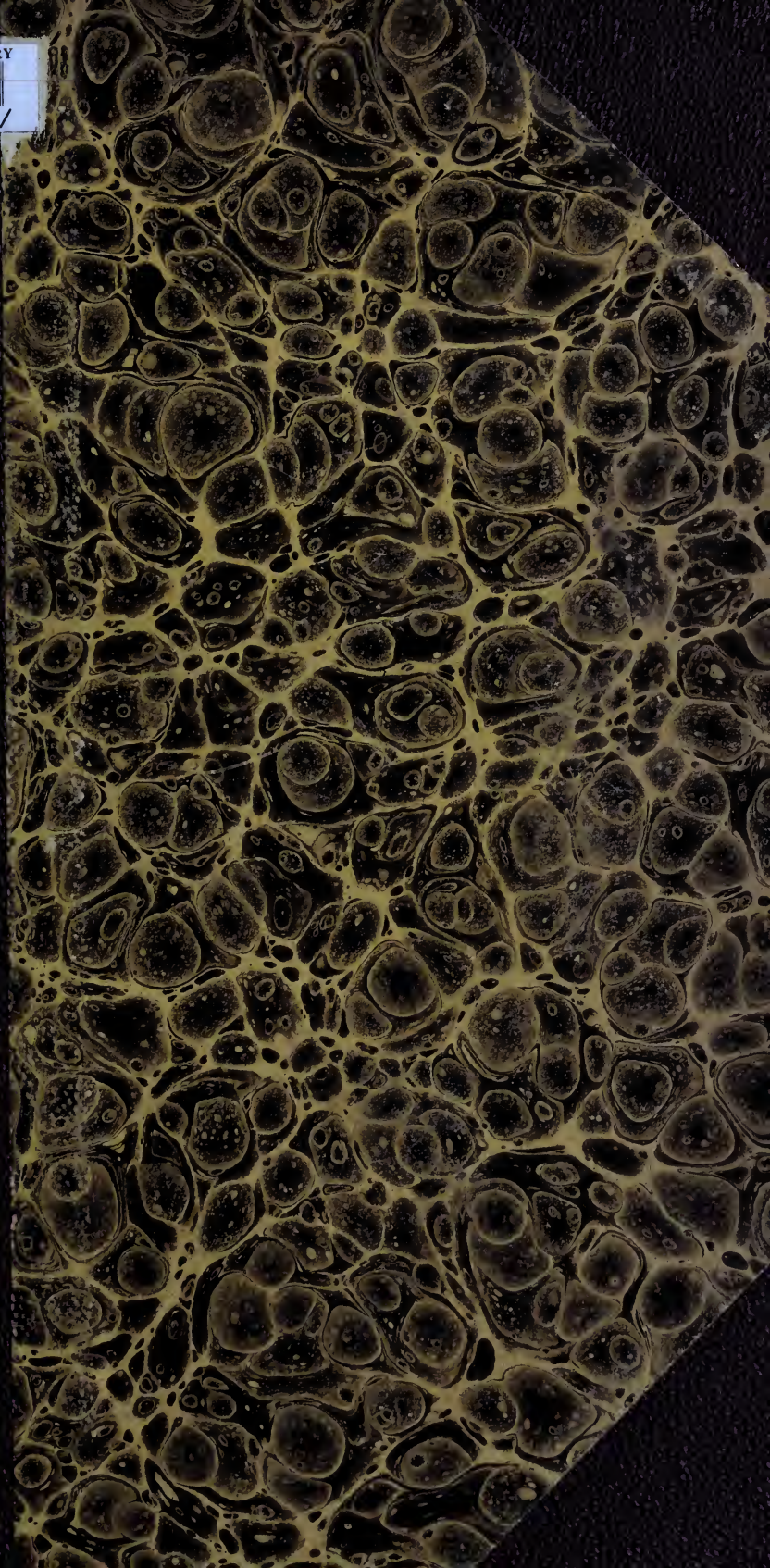


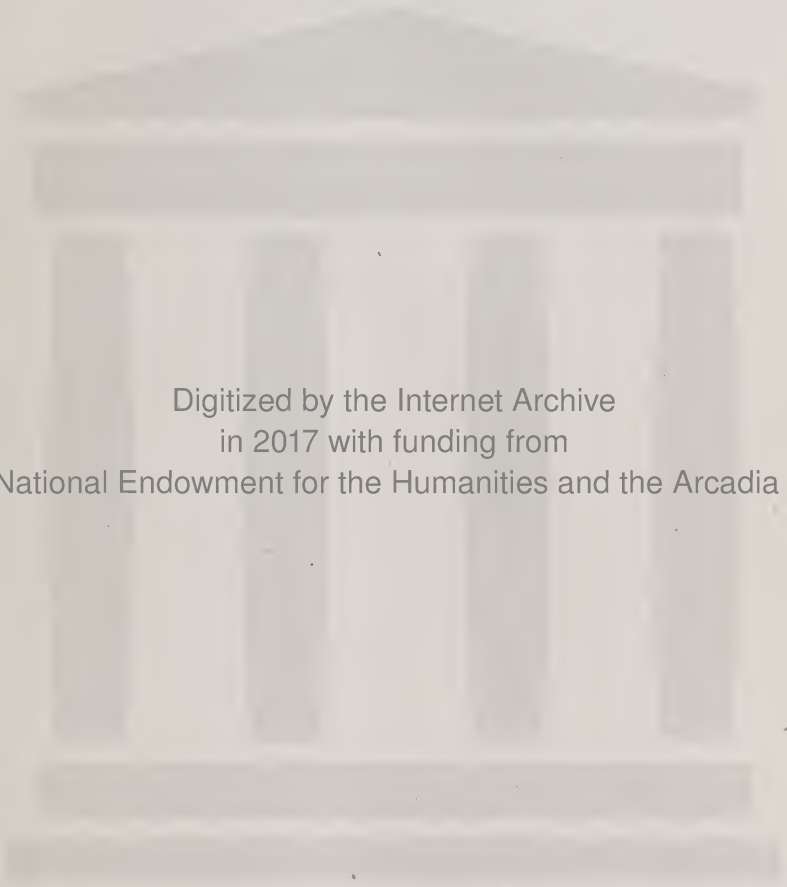
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A NEW FACTOR IN THE ETIOLOGY AND TREATMENT OF INTERMITTENT FEVER: DESTRUCTION OF THE PARASITE BY ULTRA-VIOLET RAYS OF FLUORESCENT LIGHT.*

By A. F. A. KING, A. M., M. D.,

Washington, D. C.

The following paper is based on the now well-established facts : (1) that malarial fever is produced by an animal parasite—the *plasmodium malariae*—which feeds on and breeds in the red corpuscles of the blood ; (2) that this organism gets into the blood by the bites of mosquitoes ; (3) that the paroxysms of fever are produced by the periodic sporulation of successive groups of these parasites, and (4) that generally, but not always, the parasite is destroyed and the disease cured by quinine.

These statements have now passed from the realm of hypothesis into that of complete demonstration.

The purpose of the present paper is to discuss a hitherto unrecognized factor, which, in the natural order of things, promotes the sporulation of the parasite *after it has entered the blood*, and in the absence of which such sporulation will not take place. This is the theory. I confess, at the outset, that the evidence to be presented in support of it is inconclusive, and I regret, our own malarial season being past, that immediate experiment is not available. If I can succeed in attracting the attention of others who may be able and willing to submit the matter to experiment, the purpose of the present writing will have been accomplished.

The unrecognized factor to which I have referred is the *light* of the sun : my idea is that the *parasite will not sporulate in the dark*.

From time immemorial malarial fever has been recognized as a disease of *hot* climates and seasons ; it prevails especially in the

* Read before the Medical Society of the District of Columbia Jan. 15, 1902.

tropics; it increases progressively as we approach the equator. Hence solar *heat* has been considered a most important element in the etiology of this disease. We read that everywhere the disease is increased by the burning "rays of a vertical sun," &c.; and yet there is really no scientific evidence that solar heat is concerned in the production of this fever.

Of course, we must constantly bear in mind that a certain elevation of temperature is necessary at all seasons and in all places to keep alive and preserve the activity of inoculating mosquitoes, both in temperate and tropical regions; but farther than this the role of temperature in the production of fever would seem to have been overestimated.

If heat *per se* were so important an etiological factor, we ought to find, in malarial localities, that persons exposed to great heat, as the workers about iron furnaces and factories, the firemen and stokers of engines and steamships, &c., would be more liable to the disease than others not so exposed. The cook, stewing over her fire, should be more liable than the chambermaid and coachman. But there is no evidence to this effect.

Again, the negro, in his black skin, which absorbs heat like a black coat, enjoys a relative immunity from fever, even in the tropics, which presents to us the curious anomaly of the *hottest individual being the fittest to survive* in a region rendered unhealthy by solar heat.

The island of Tahiti is only 18 degrees from the geographical equator, and almost beneath the thermal equator, yet the Tahitians "are free from marsh fevers." (Quatrefages on the *Human Species*, p. 221.)

Dr. Manson, in his excellent treatise on "*Tropical Diseases*" (Introduction, p. XIX), observes:

The more we learn about these diseases, the less important in its bearing on their geographical distribution and as a *direct pathogenic agency* (italics mine) becomes the role of temperature *per se*, and the more the influence of the tropical fauna.

Professor Angelo Celli, in his recent (1900) work on *Malaria*,—translation by John J. Eyre—calls attention to the observations of Scalzi touching the correlation between the individual meteorological factors and malaria, which showed that during the years 1877 and 1878 the malarial phenomena during the first six

months of the year ran almost uniformly, with a *rapid* rise in July and August, while the temperature rose *gradually* from January to July and August. "Consequently," remarks Celli (pp. 157-8), "the two phenomena of malaria and temperature do not run perfectly parallel; there is certainly a correlation between them, but it is not so simple and direct as some authorities believe."

Professor Celli also reproduces a table (Ibid., p. 159), made by Professor Tacchini, Director of the Central Meteorological Office of Rome, showing the correlation of weather factors and malarial fevers during the years 1871 to 1882, inclusive. Commenting on this table,* Professor Celli remarks:

We see at once that in the year 1879, when a true malarial pandemic raged, the mean temperature for the months of July and August was the *lowest* of these years.

Finally, how *can* the external temperature act upon the parasite to promote its sporulation when the blood in which the parasite is contained remains, in normal man, 98.2 F.? And in an individual already suffering from typical intermittent fever the blood temperature is, for the most part, actually *subnormal*; that is to say, while the temperature may rise to 104 or 106 during the few hours of the cold and hot stages of an ague paroxysm, during the much more prolonged period of the intermission it will usually be between 97 and 98, or thereabout. It would seem, therefore, that the parasite in the *cooler blood* cannot be affected by the *hotter air* outside. If it can, we have at present no scientific proof of the alleged fact.

I conclude, therefore, that scientific evidence *demonstrating* that malarial fevers in hot seasons and countries are produced directly by the *heat* of the sun, is still wanting.

But if the ancient "solar heat" theory be not true, can we not explain the evident correlation between hot seasons and climates and these fevers by eliminating the term *heat* and substituting therefor that of *light*? It is the *light* of the sun, not its *heat*, that determines the periodic sporulation of the malarial parasites in the blood, and thus gives rise to the fever paroxysms. At least, I think I am justified in proposing this idea as a working hypothesis.

* Reproduced further on in this article, p. 11.

I proceed, therefore, to discuss the following propositions, and to present what evidence I can of their demonstration :

1. The sporulation of malarial parasites in the blood will be retarded, or fail to take place at all, in continued darkness. Other things being equal, this sporulation will be the more rapid and complete in direct proportion to the intensity of the sunlight to which the body may be exposed and the duration of such exposure.

2. To *prevent* malarial fever (after infection) protect the human body from the *light* of the sun.

3. To *cure* malarial fever, protect the human body from the light of the sun, or in some other way prevent the parasites from receiving this light.

The evidence will comprise several different statements, each of which will now be discussed *seriatim*, as follows :

First. The accumulated experience and observations of centuries, which have been held to prove the agency of solar HEAT in producing malarial fever, may with equal justice be held to prove the agency of solar LIGHT.

The light and heat of the sun are, necessarily, inseparable twins. The vertical *heat* rays of a tropical sun must always be accompanied with its vertical rays of *light*. Wherever, in the past history of malarial disease, we read of the "*burning* sands of Africa" and the "*scorching* plains of India," as illustrating the etiological factor of *heat*, there also must have been "*the dazzling* sands of Africa" and the "*glaring* light of India's *blazing* plains," illustrating the etiological factor of *light*. So with hot and dry seasons in more temperate climates : the cloudless skies of a hot summer diffuse an intense and brilliant *light*.

Since it is impossible to imagine how the external *heat* can reach the parasite floating in a cool bath of blood, and, on the other hand, since it is easily intelligible how the sun's light *can* penetrate the skin and act upon the plasmodium to promote its development just as light furthers the vital activities of other amoebae, under these circumstances the observations of past times might perhaps be ascribed to *light* with even *more* justice than to solar *heat*.

Second. Paroxysms of typical intermittent fever will not, as a rule, take place at night, or in the dark.

Some authorities regard the "regular tertian" as the natural type of the disease, while others so designate the "quotidian" cases. I do not know which is right, but it is important to separate cases that *do* run their natural course from those that do *not*. The "remittent" cases and the "aestivo-autumnal" ones are certainly irregular and atypical, so that it will be chiefly in the "regular intermittents," whether tertian, quartan or quotidian, that we must seek the *natural phenomena* of the malarial process.

That "chills" do not occur at night has been observed and recorded by very many authorities. I shall quote only a few. The late Professor George B. Wood, in his *Practice of Medicine*, Vol. I, p. 258, writes as follows :

It is a remarkable fact that the paroxysms seldom occur during the night. * * * The rule is not universally, but generally, true. In the vast majority of cases the time of attack is between eight in the morning and eight in the evening, and it is worthy of observation that, in the anticipating and retarding cases, when the receding or advancing paroxysm *reaches the period of darkness* [italics mine] it is apt either to be arrested in its course or to leap over the night, backward into the evening, or forward into the morning. Thus the paroxysm of an anticipating tertian, occurring first at noon and recurring afterwards successively at the hours of ten, eight and six, will, after attaining the last-mentioned hour, either continue to recur at the same hour or will return next time at about six or eight in the evening preceding the regular period. A retarding tertian, on the contrary, after reaching the confines of night, makes its next attack in the morning, subsequent to the regular day of return.

Dr. Austin Flint (*Practice of Medicine*, Third Edition, 1868, p. 857), remarks :

Paroxysms may occur at any hour of the day. They very rarely occur during the night.

Dr. George Fordyce (*On Fevers*, First American Edition, 1815, p. 114), after making about the same statements already cited from Dr. Wood, and to whom the latter refers, says :

It is not meant to say that the paroxysms never return regularly in the night, but that they recur much more rarely in the night—perhaps in a proportion of ten to one. It is entirely unknown upon what this depends ; indeed, the observation has been little attended to by any author who has not frequently seen the disease.

Numerous other authorities might be quoted to the same effect, but I deem this unnecessary.

The exceptional cases, in which the paroxysm *does* occur at night, may perhaps be accounted for by some other disease having been associated with the malarial affection, such as tuberculosis, fever of suppuration, abscess of liver, secondary syphilis, &c., or by artificial light—possibly by moonlight. In bygone days it was not uncommon to confound the chills of tubercular disease with those of ague—an error from which the present period is not entirely free. Some of the older writers speak of malarial-fever cases in which quinine entirely failed to arrest the paroxysms, and the patients went from bad to worse, and died of pulmonary consumption. These were, presumably, cases of tuberculosis *ab initio*. But even admitting the exceptional cases to be *unexplained*, the general rule remains that ague chills *do not occur at night*. All that need here be added is, *with night comes darkness*, when the parasites in the blood can no longer get the sunlight upon which their sporulation depends. This influence of light seems to be the more necessary as the developing parasites approach the culminating *completion* of their sporulation. Darkness stops the process. In a state of nature, the nude savage of the tropics, feeling the premonitory chilliness of the approaching paroxysm, probably tried to warm himself in the sun (as we draw near our fires and put on blankets, &c.), and thus secured for the parasite the best provision for complete sporulation. The parasite of to-day, with its hereditarily-transmitted endowments, misses the ancestral environment of sunshine, and so its normal sporulation is retarded. That in retarding cases of intermittents the chills should get an hour or two later is easily explained by the patient (feeling badly from the paroxysm of the previous day) lying in bed an hour or two later than usual, and thus depriving the parasite of an hour or two of its requisite sunshine, just as (Dr. Flint tells us in his *Practice of Medicine*, p. 865) “a paroxysm is sometimes warded off by taking to the bed before the hour.”

Most writers speak of the variation in the period of recurrence in retarding cases being “one hour” or “two hours,” as if it were more likely to be *even hours* than fractions of half an hour. Whether or not this be their real meaning, it could very well be accounted for by the striking of clocks, the ringing of bells, blowing of whistles, etc. A poor patient—perhaps a milkman or

market gardener, accustomed to rise with the sun, or even before—languidly indulging a prolonged morning nap after having had a febrile paroxysm on the previous day, would be aroused to action and warned to “get up” by the striking of his clock. Thus, perhaps, the “even hours” of retardation may find a possible, though somewhat fanciful, explanation.

Whether these cases really *are* produced by thus prolonging the shades of night into the morning can easily be tested by those who in future may have opportunity for experiment.

Third. The relative liability and relative immunity of different races of men to these fevers will depend, respectively, upon the relative translucency or non-translucency of their skin and of their blood.

Quatrefages (the *Human Species*, p. 426) tells us that “of all human races, the white is most sensitive to marsh fevers, and the black least so,” and again (*Ibid.*, p. 424), quoting the table of M. Boudin in which is given a summary of the English official documents upon the annual mortality in the thousand, at Sierra Leone from 1829 to 1836, the relative mortality of whites and blacks from marsh fevers is shown to be 410.2 for the whites and 2.4 for the blacks.

“Marsh fevers,” says the same author (p. 223), “act in the same manner upon all men. The negro suffers and dies from fever on the banks of the Niger, but in a much less degree than the white. Moreover, the two races, when transposed to India, preserve, in this respect, about the same relations. Compared with local races, the negro still retains the ascendancy; he is everywhere the last attacked by malarious emanations.”

Dr. William Ferguson, Inspector of Army Hospitals, &c., writing on the “Nature and History of the Marsh Poison,” in 1820, (*Trans. Royal Soc. of Edin.*, 1818–1823, Vol. 9, p. 297), remarks: marks:

The adaptation of the negro to live in the unwholesome localities of the Torrid Zone, that prove so fatal to Europeans, is most happy and singular. From peculiarity of idiosyncrasy, he appears to be proof against endemic fevers; for to him marsh miasmata are in fact no poison, and hence his incalculable value as a soldier for field service in the West Indies. The warm, moist, low and leeward situations, where these pernicious exhalations are generated and concentrated,* prove to *him* congenial in every

*At the present era we should say, instead of this: where the pernicious *Anopheles* most abound.

respect. He delights in them, for he there enjoys life and health as much as his feelings are abhorrent to the currents of wind that sweep the mountain tops, where alone the *whites* find security against endemic fevers.

Dr. Wm. H. Welch, in his contribution on "Malaria," in *Loomis and Thompson's System of Medicine*, Vol. I, p. 81, says:

In many malarial districts the natives—negroes, Arabs, Indians, Tamils—appear to have a relative insusceptibility to the disease, the degree of which varies in different localities and according to different authors. Our observations in Baltimore would tend to show that here the susceptibility of the negro is only about one-third that of the white.

Dr. Wm. Osler, in his contribution on "Malarial Fever" to *Albutt's System of Medicine*, Vol. 2, referring to *race*, tells us that the Caucasian is more subject to the disease than brown and black races, and that of 614 cases observed at the Johns Hopkins Hospital, in Baltimore, only 4 per cent. were in the negro race. He adds, however, with characteristic fairness, that the attendance of colored persons at the hospital was only 12.2 per cent.

While every one knows that the negro race enjoys some immunity, yet throughout the United States we see hundreds of negroes victims of ague. *Why* should some of these suffer and others not? As yet there has been no explanation other than "specific idiosyncrasy"—a term without meaning—or adaptation to climate, &c. Does not the relative transmissibility of the skin to light afford a better solution of the question?

In recently examining over one hundred negroes of different colors, in Washington, to determine the translucency of their skins (and conveniently using for this purpose a cylindrical electric pocket flash-light, placed against the anterior surface of the external ear—better than the *hand*, on account of the latter varying in the thickness of skin, from occupation, &c.), I was surprised to find that *light passed through the skin almost as readily* as through the skin of a white person. In only *three* individuals of the whole lot—two of them advanced in years and one middle aged—did I find the skin *absolutely impenetrable* to light. *Their* skins were very dark, but not as black as a pure African; and while they had *never in their lives had ague*, though living in ma-

larious localities, this does not count for much, since there were also other individuals in the same localities, with *translucent skins*, who had *never had* ague.

There appears reason to infer, therefore, that some negroes are not more exempt than white persons, because their skins, though of darker hue to an outside observer, are really not more impenetrable to light than the skin of a white person.

Future experiments in tropical regions may be expected to demonstrate that races or individuals enjoying entire immunity, will be found to have skins that will not allow the transmission of light. I regret to say, this demonstration must be relegated to those who may, in future, have facilities for experiment in tropical and other suitable regions.

To conclude this part of the subject it may be observed that if a black skin which is impenetrable to light (no *white* skin has this property) secures immunity from malarial fever, then the very process of malarial melanosis, by which white races may be transformed into black ones, exhibits a process of conservative adaptation to environment, and the view I am seeking to establish receives some support in thus conforming to the great principle of adaptation observed in all living organisms. For instances in which white individuals have really become black from malaria see *Cinn. Lancet and Observer* November 18, 1882, pp. 479-488; also *London Medical Press and Circular*, new series, Vol. XXX, p. 303. It may be worthy of mention also that the *skins of animals* in India are "jet black" while the hair is frequently white, (Professor Robt. Wallace, in *Proc. Roy. Soc. Edin.*, 1887-'88, Vol. XV, No. 126.)

Whether the *blood* of the negro is too dark in tropical countries to allow transmission of light to the parasitically infected blood corpuscles, may also be well worth investigation. That blood holding in solution abundance of black pigment from malarial disease should be darker than normal, would seem likely, but all this requires further experiment. Numerous authorities affirm that the negro's blood *is* darker than that of white persons. (See Cartwright in *New Orleans Med. and Surg. Jour.*, September, 1851, Vol. VIII, pp. 190-193.)

Fourth. In places where malarial fever prevails the disease is increased by bright, sunny weather, and lessened by clouded skies.

Observations in support of this statement are plentiful, and the

observed phenomena have usually been ascribed to "salutary rains."

Dr. Jackson (*Fevers of Jamaica*, p. 196) could not account for soldiers being benefited by marching in the rain, which last continued, with little intermission, for two or three days. "This," he says, "will probably be reckoned among the first instances where *traveling and getting wet* are recommended as being useful in the cure of fevers." In another instance (*Ibid.*, pp. 54, 55) part of the encampment, over which *fog hung frequently till late* in the day, suffered much less than another part, which camped on a dry and elevated situation.

Dr. Wm. Ferguson (*Trans. Roy. Soc. Edin.*, Vol. IX, pp. 274, 275) calls attention to the salutary influence of prolonged and constant rains. In 1815-17 Ferguson made a topographical health survey of the West India colonies. He remarks (p. 280): "There might be seen a country made perfectly healthy by rain, but under the drying process of a vertical sun, converted into a hotbed of pestiferous miasmata."

Of Trinidad he says, it always rains nine months in the year; if it only rained eight, or "if at any time there was a cessation of the preserving rains," the worst kind of remittent fevers were sure to appear.

I next present Prof. Tacchini's table (referred to on page 3), quoted by Celli (*On Malaria*, p. 159), which, while it does not exhibit a *constant* relation between cloudiness of sky and reduction of fever cases, yet this correlation is sufficiently frequent to deserve notice. Thus, in 1879, when, of all the twelve years included in the record, the percentage of fever was *highest* the nebulosity was *lowest*. In the two years, 1878 and 1882, when the fever was *low* the nebulosity was *high*. In 1880, however, while the percentage of fever was *high*, the nebulosity was also *high*. This is conflicting. Can it be that of the unusual number of fever cases of 1879, some, uncured, were carried over to 1880?

Enough, I think, has now been said in support of this *fourth* heading. *When the light of the sun is veiled by rain clouds and fogs the parasites get less sunlight, and their sporulation is retarded.*

It is almost needless to add corroborative evidence from the opposite direction, viz: that the brighter the light, the greater the liability to fever. Exposure to the *direct rays* of the sun has long been recognized as a most potent cause of ague. Berry-

pickers are especially liable. Dr. Osler tells us that in Baltimore, *sailors* and *fishermen* are particularly prone to the disease. (*All-bull's Syst. of Med.*, Vol. II, p. 723.) Everyone who has had any experience in sailing and fishing must have observed how intensely brilliant is the sunlight to which he is exposed. It not only comes down unobstructed from the sun itself, but is reflected with dazzling brilliancy from the surrounding water. A pale Caucasian after one day's outing returns with the record of the *light* to which he has been exposed legibly written on his tanned face and hands. Exposure to *heat* in a dark room does *not* bronze the face, but rather leads to pallor.

PROFESSOR TACCHINI'S TABLE XIII.

Years.	Rainfall in months of March, April and May.	Percentage of fe- vers in the Prov- ince of Rome.	Mean of the maxi- mum tempera- ture in July and August.	Nebulosity of the third quarter; tenths of sky covered.	No. of scirocco days in the third quarter.	Frequency of north winds in July, August and September.
	<i>Millimeters.</i>		<i>Centigrade.</i>			
1871	185.8	6.4	30.3°	2.3	4	0.370
1872	251.3	7.1	30°	2.5	5	0.328
1873	187.7	7.3	32.1°	2	5	0.372
1874	225.8	5.5	30°	2.7	3	0.415
1875	258.7	6.2	30°	2.9	3	0.341
1876	205	4.6	29.9°	2.8	2	0.370
1877	191.9	4.2	31°	2.7	8	0.311
1878	101.8	2.9	30°	3.5	10	0.337
1879	369.9	11.4	29.8°	1.8	4	0.335
1880	209.8	8.2	30.6°	3.2	5	0.335
1881	227.3	6.6	31.7°	2.7	4	0.196
1882	115.7	2.5	29.4°	3	11	0.200

It has long been a matter of common observation that workmen employed in digging excavations are particularly liable to ague; but this has not been satisfactorily explained. As notable instances, Dr. Thayer mentions the excavations made in digging the Panama Canal, and the Canal St. Martin, in Paris. Can this be explained by the extra sunlight reflected by the walls of the excavations? This reflected light may not be apparent under ordinary circumstances, but were it possible to surround the excavation with darkness, its walls would shine with the silver brilliancy of a moon, and from the same cause (pools for mosquitoes in excavations).

Fifth. It has long been a popular tradition that to prevent the occurrence of ague in malarial regions, or to forestall its RECURRENCE when it has once occurred, it is desirable to keep in the SHADE and avoid SUNLIGHT.

Persistent and well-established traditions have a certain amount of evidential value. It is well not to ignore them entirely. While they are evolved in the school of nature, from blind instinct and experience, without regard to reasonable explanation—just as “Nature teaches beasts to know their friends” (Shakespeare)—yet there is often a modicum of truth in them. Momson tells us that the peasants of Italy and natives of German East Africa, have believed *for centuries* that fevers were produced by the bites of mosquitoes) *Tropical Diseases*, pp. 19, 20), so now we find the old idea that *sunlight* will bring on a chill, and *shade* prevent it, is beginning to assume scientific importance.

Sixth. In typical cases of ordinary ague the disease is spontaneously curable, without medicine, by keeping the patient in the shade.

Dr. Thayer (*Loomis & Thompson*, Vol. I, p. 121), tells us that quartan and tertian agues in the majority of cases tend to spontaneous recovery, from destruction of young parasites with each paroxysm. To what this destruction is due (he says) *is yet doubtful*. It is not uncommon to see one complete paroxysm followed by complete disappearance of symptoms and of parasites from the blood. In such instances, *by some means or other*, the greater part of an entire group is destroyed at the time of segmentation. In such cases there may be complete apyrexia for from several days to two weeks or more; then the paroxysm may be repeated.

Dr. Osler (*Allbutt's Syst. of Med.*, p. 734) observes that if not treated, spontaneous disappearance is not uncommon. Of 58 tertian cases eleven showed spontaneous disappearance after admission; in three others fever disappeared after one or more paroxysms, without quinine. In such cases recurrence is almost certain in a few weeks or months, etc.

A hundred years ago Dr. Jackson (*Fevers of Jamaica*, p. 204) wrote of thirty cases,—ten treated by emetics, ten by purgatives, and ten let alone—all did alike, ending in recovery.

So much for the testimony as to spontaneous recovery. For me to allege that these cases were cured by being housed in a hospital and thus shaded from the light of the sun, would be a pure

assumption. And while it must be admitted that *direct experiments with sun light* are necessary to decide the matter, it may certainly, and with all fairness, be said (assuming, of course, that these hospital patients *were* protected from direct sun rays) that the absence of sun light would seem to afford the only "some means or other" for which Dr. Thayer seeks in vain, to *explain* the disappearance of the parasites.

That rest, food and improved nutrition on the part of the host should kill the sporulating parasites seems unreasonable; they would rather provide a better feast of red corpuscles on which the parasites could prosper.

That being housed in bed stops the sporulation, because of protection from the sun's *heat*, is again unreasonable; for it would force us to the admission that while comfortably warm in bed a man's blood is too cold to allow the parasites to sporulate.

Protection from *light* seems to be the only factor, constant in each set of cases, by which the spontaneous recovery becomes explicable; and the recurrences, a few days or weeks later, may be also explained by the convalescents again exposing themselves to the sun's light.

Seventh. The malarial parasite is a naked amoeba. Experiment shows that RED light promotes the vital activities of amoebae, while violet or purple light restricts them. The color of the light diffused through the blood is necessarily red.

It has been well known for a very long time that many forms of *protozoa* are remarkably sensitive to ordinary sunlight, but that they should be affected differently by light of different *colors*, is of more recent origin. In the experiments of Drs. Harrington and Leaning (*Amer. Jour. of Physiology*, Vol. III, No. 1, 1899, pp. 9-18), on the common *Amoeba Proteus*, it was shown that its protoplasm may be set in motion or brought to rest by varying the *color* of the light to which it is exposed. These experiments referred chiefly to the "*streaming*" of protoplasm, that is to say, to the production of visible currents of granules caused by contraction of the amoebae, and consequent pseudopodial formations, &c.

Their concluding summary (p. 18) is as follows:

1. *Amoeba* streams in the presence of red light.
2. Streaming is retarded, stopped or reversed by rays from the violet end of the spectrum.

3. Further, the effectiveness of the following kinds of light as inhibitors of protoplasmic flow diminishes in the order named: white, violet, red.

4. Enucleated amoebae stream in red light, and cease to stream in violet or white light.

That the normal light of the blood is red—from the color of its corpuscles—needs no accentuation. If the *plasmodium malariae* be a light-loving organism, red light would inevitably be its natural requirement while in the blood, and we might expect to find its activities inhibited, like those of the *amoeba proteus*, by light from the violet end of the spectrum. This, in fact, we *do* find. The administration of Prussian blue (an old remedy for ague), and more recently of methylene blue (mingling of blue and red produce purple or violet), seem so far to inhibit the protoplasmic movement of the malarial parasite as to prevent its sporulation, and thus cut short the ague paroxysms. Numerous cases have been reported by Mya, Thayer, Boinet and Thintignan; also by Huddleston, of New York, and Muhll, of Basle (*Sajous' Annual*, Vol. I, 1893, pp. 77-79,) and by Rose in *Post-Graduate*, N. Y., Vol. XVI, Sept. 1901, No. 9, p. 831. Various explanations have been given of the curative influence of methylene blue. It has been said to *stain* the parasite, or its nucleus. If this be true, the blue stain of the organism itself, commingling with the *red* light in, and outside of the blood corpuscle, would produce the (to the parasite) disastrous violet or purple.

That the *bulk* of the blood was colored by methylene blue in *some* of the cases would appear probable from the blue color of the urine, which last could only come from blue blood in the renal malpighian tufts.

Very many of the old remedies employed successfully for intermittent fever were derived from barks, most of which contain tannic acid. This acid, combining with iron in the blood, of course produces tannate of iron, which is the basis of black ink. Oak bark and powdered nutgalls are reported to have cured ague in some cases when quinine had failed—a statement to be taken *cum grano salis*. Some months ago I had several hundred 5-grain pills of gallic acid prepared, some of which were sent to Dr. Richardson, of St. Elizabeth Hospital, who kindly allowed them to be given by Dr. Stack, one of the attending physicians. Dr. Stack writes me that he had tried them in two cases for four days with-

out arresting the febrile paroxysms, while the same cases were promptly arrested, and the parasites made to disappear, by quinine.

Dr. D. P. Hickling, of the Washington Asylum Hospital, also used the pills, but in only one case (the presence of parasites having been demonstrated), with the result of promptly arresting the paroxysms. I examined this patient—a white woman—while under the influence of the drug, hoping to find her blood so dark as not to transmit light. But this was not so; light passed through the ear quite readily. In another case of regular tertian fever the pills were given by Dr. A. R. Shands and the paroxysms arrested, but in this case there was no microscopical examination of the blood. The evidence thus afforded in so few cases is of little value, though rather negative than otherwise. Nor was the relative amount of sunshine and shade to which the several patients were exposed noted. Then the season passed, and no new cases occurred.

Finally, with regard to the enigmatical curative action of quinine, is there any peculiar relation of this substance with light that would give us a clue to its explanation?*

The bisulphate of quinine possesses in a remarkable degree the quality of fluorescence. In solution it seems to accentuate the violet rays of the spectrum; at least, it renders the ultra-violet rays perceptible to human vision. Waves of violet light are only 1-57,500th of an inch in length, while red light waves are 1-39,000th of an inch long. The red rays are the most refrangible; the violet least so. Ultra-red rays possess a high heating power, while the ultra-violet are "feeble as regards heat, powerless as regards light, and of the highest importance because of their capacity to produce chemical action." (Tyndall's *Lectures on Light and Electricity*, p. 66.) Possibly, in its own little microscopic world of a blood cell, with granules and rods of pigment possessing various refractive, and we know not what other optical properties, the quality of fluorescence may affect the plasmodium in more ways than we can imagine.

Another substance remarkable for its striking fluorescence is Esculin, a bitter principle made from the bark of *Æsculus Hip-*

* In the catalogue of the Library, S. G. O., the literature on *The Physiological and Therapeutical Effects of Quinine* covers 5½ double-column pages, the titles including 66 volumes and 303 authors who have written communications (pamphlets) upon the subject.

pocastanum (horse-chestnut tree.) On page 93 of *Merck's Index* for 1896 (published by Merck & Co., manufacturing chemists, of New York) esculin is described as an "antiperiodic.—Uses: Instead of Quinine in Intermittent Fever." (They inform me that very little of it is sold, probably from its high price—about 3 cents a grain.) It has been often used successfully for intermittent fever. (See *U. S. Dispensatory*, 1894, xviith edition, pp. 1542-3.)

In the *Gazette Medicale de Lyon*, for October 16, 1858, Tome X, pp. 417-8, Dr. Monvieux reports twenty-eight cases of intermittent fever successfully treated by esculin—a report, the impartial truthfulness of which is accentuated by the fact that it is followed by ten other cases which were *unsuccessfully* treated by the same remedy, but which were promptly cured by quinine. An article in the *Dict. Encyclop. des Sci. Med.*, Second Série, Tome V, p. 141, refers to the experiments of MM. Mouchon, Durand de Lunel, Diday, Vernay and Montevoux, as demonstrating that esculin is comparable to quinine as an antiperiodic. The bibliography at the end of this article comprises 23 references to esculin, dating from 1720 to 1858.

Chemists and physicists mention another substance that is remarkably fluorescent, viz: fraxin (or fraxinine) a glucoside ($C_{21}H_{22}O_{13}$) found in the bark of the *Fraxinus Excelsior*, the common ash tree of Europe. And I find that this too was often administered for intermittent fever before the discovery of quinine, and one writer, who later reports cases cured by it in which quinine had previously failed, was so convinced of its efficacy that he surnamed it "*quinquina d' Europe*." (*Etude sur la Fraxinine* par M. Maudet in *Rev. Med. Franc. et Etrang*, May 1853, pp. 532-535).

It may be noted that the fluorescence displayed in a solution of esculin immediately *disappears* on adding a few drops of dilute sulphuric acid, but it promptly *reappears* on adding a few drops of aqua ammoniae to the same specimen. Possibly, in the cases where esculin failed, the alkalinity of the blood was deficient, and thus no fluorescence was produced. There may be conditions—yet unknown to us*—which destroy the fluorescence of quinine in the human body, and thus explain the cases—usually *dis-*

*Stokes discovered that solution of common salt destroys fluorescence of quinine (Jones says: in *sun light*, but not in electric light); and by adding solution of sulphate of soda to solution of chloride of quinine, fluorescence in great measure returns. (*Med. Times and Gaz.*, London, Aug. 18, 1866, p. 163.)

credited—alleged to have been cured by other remedies after quinine had failed.

Now while the antiperiodic effects of these fluorescent substances—esculin and fraxin—seem to *favor* the view that fluorescence may be the curative property in quinine, yet the *proof* is insufficient. What we really need is direct experiment showing that quinine actually produces fluorescence in the blood, and that coincidently with this production the symptoms and phenomena of intermittent fever disappear.

Happily I am able to present exactly these experiments with exactly these results—experiments that were performed more than thirty years ago, but for an entirely different purpose, and, be it noted, before the discovery of the malarial parasite, and before the part played by the mosquito in malarial disease had been suggested.

These experiments—so long buried in oblivion apparently—were brought about in the following way: In 1866, Dr. Henry Bence Jones (*Med. Times and Gazette*, London, August, 1866, pp. 163-167), experimenting on the rate of passage of medicinal substances, especially lithia, into and out of the body, was led to use quinine for this purpose, on account of the extremely minute quantity of this substance that could be recognized by its fluorescence. So delicate was this test that one grain of quinine in 1,000,800 parts of water—nearly 117 liters—showed a blue fluorescence distinctly in 20 grains of such a solution.

Using the spark of a Ruhmkorff coil as the source of light, he got the following results:

Slight fluorescence when 1-360,000th of a grain of quinine was present.

Feeble fluorescence when 1-330,000th of a grain of quinine was present.

Distinct fluorescence when 1-250,000th of a grain of quinine was present.

Experimenting with guinea pigs, he was now disappointed to find that fluorescence appeared in those that had *not* taken quinine, but it was less pronounced than in those to which quinine *had* been given.

Without following him in detail, the final result of his experiments was the discovery in the tissues of guinea pigs and man—in the liver, lenses, kidneys, urine, bile, blood, brain, nerves, mus-

cles, humors of the eye, cartilages, spleen and lungs—of a substance which possessed *all* the chemical and optical properties of quinine, including fluorescence. This substance he called “animal quinoidine.”

He gives the following table, “showing the amount of fluorescent substance in different parts of guinea pigs and of man, measured by the number of grains of quinia in one hundred liters of distilled water that yielded the same fluorescence :”

.....	In guinea pigs.			In man.		
Liver	6 to 3	6	2	2	2	2
Lenses.....	3	2	2	2	...	...
Kidneys.....	3	2	2	2	2	3 to 6
Urine	3	2	2	...	...	...
Bile	3	2	2	...	...	...
Blood.....	3	2	2	...	...	...
Brain	3	2	2	...	...	...
Nerves.....	3	2	2	1	1	2
Muscles.....	3	2	2	1	2	2
Humors of eye	2	2	2	...	...	...
Cartilages .....	...	...	...	3	1	...
Spleen .....	...	...	...	1	1	3
Lungs.....	...	...	...	1	1	2

The degree of fluorescence was determined by comparison with the fluorescence of standard solutions of quinia of known strength, and accepted as an index of the quantity of “animal quinoidine” present.

After giving a guinea pig four grains of sulphate of quinine, the fluorescence in fifteen minutes may equal that of seventy-five grains of quinine in one hundred liters of water ; in three hours the fluorescence may rise to between one hundred and two hundred grains of quinine in one hundred liters of water. Then it decreases gradually, so that at the end of seventy-two hours no trace of the fluorescence produced by the quinine is left, not even in the liver, where after forty-eight hours some trace of it did remain.

In the beginning of his paper Jones remarks : “ No imagination could have anticipated that this line of research into the rate and passage of substances into and out of the textures would lead to the supposition that man and all animals possess, in every part of the body, the most characteristic peculiarity of the bark of the cinchona trees of Peru ;” and towards the end of his paper (p. 165) he says : “ Assume that a substance like quinine exists, during

health, in the textures, can its rapid destruction and removal through the action of marsh miasm give rise to ague?"

A year or two after Jones' publication, as appears in the *Pennsylvania Hospital Reports for 1868*, pp. 269-280), Drs. Edward Rhoads and William Pepper, of Philadelphia, endeavored to determine "whether there might not be, as an attendant upon the pathological processes in malarial disease, a rapid and marked diminution in the amount of 'animal quinoidine' naturally existing in the tissues" (p. 272).

They first repeated and corroborated the experiments of Jones, and then proceeded to test the blood of malarial patients, with the result of finding the *fluorescence below the normal standard*. Altogether they give twelve cases, as follows:

Case 1. A healthy woman; never had malaria; fractured arm and ribs. Blood test yielded fluorescence 3.

Case 2. Tertian ague; 14 days duration; no medication except purgative pills. Fluorescence $1\frac{1}{2}$.

Case 3. Marked intermittent; no medication; duration indefinite. Fluorescence 1.

Case 4. Duration indefinite; marked intermittent; no previous medication. Fluorescence $\frac{7}{8}$.

Case 5. Tertian fever; 30 days duration; no previous medication. Fluorescence $\frac{7}{8}$.

Case 6. Quotidian; five weeks residence in malarial district; imperfect history; no previous medication. Fluorescence $\frac{3}{4}$.

Case 7. Quotidian and tertian; duration 18 days; chills broken by quinia on 6th day, recurred on 14th day; no quinia for one week before examination. Fluorescence $\frac{2}{3}$.

Case 8. Tertian; 15 days duration; no medication for 60 hours previous to examination. Fluorescence $\frac{3}{8}$.

The foregoing seven cases—from 2 to 8 inclusive—demonstrate a diminution of fluorescence in malarial disease.

The next two cases demonstrate the same diminution, and also show increase of fluorescence and cure of the disease by medication with cinchona.

Case 9. Quotidian; 15 months duration; spleen much enlarged. Previous medication, purgative pills. Fluorescence: *none* could be discovered and it was doubtful if any existed. After 14 days treatment with sulphate of cinchona there was no recurrence of paroxysms; much improved. Fluorescence $1\frac{1}{4}$.

Case 10. Quotidian ; three weeks in malarial district ; irregular symptoms for some days, then quotidian for 9 days. Four grains of quin. sulphas. nine days before examination. Fluorescence $\frac{3}{4}$. After 6 days medication by 20 grains of cinchon. sulph. daily, condition much improved, no recurrence of chill. Fluorescence $3\frac{1}{2}$. (More than quadrupled by cinchona).

Next come two fatal cases that appear to be unsatisfactory, incomplete and difficult to classify and explain.

Case 11. Quotidian of 4 weeks duration ; last two paroxysms congestive ; final one at 11 a.m., death at 2 p.m. Had taken 20 grains of sulphate of cinchona two days before death, and one or more doses of gr. xv each on the day of decease. On post-mortem examination blood of spleen gave fluorescence of $2\frac{1}{2}$, and blood of liver $2\frac{1}{2}$.

Case 12. Chronic malarial cachexia—ten months duration, general dropsy for three months ; got better under cinchona and Basham's mixture. Was then attacked with typhoid fever and died on 9th day of the disease. Took *large doses* of cinchon. sulph. for 54 DAYS previous to death. Autopsy : Spleen enormous, soft, pale slate color. Fluorescence in blood of spleen 6, and of liver 8.

This last case shows an enormous increase of fluorescence, corresponding to the exhibition of "large doses" of cinchona for 54 days!!

At the conclusion of their paper Rhoads and Pepper remark that these observations seem to "indicate, by the uniformity of the results, a close connection between the diminution of 'animal quinoidine' and malarial disease." They add, however, that "it will be necessary to examine the blood and tissues in many other diseases in order to learn whether it be only in malarial affections that 'animal quinoidine' is materially diminished." They state that they have already entered upon a series of observations with reference to this point ; but of these I have been able to find no record.

In fact, I have found no further reference to their experiments, except in one paper by Dr. Chas. K. Mills, of Philadelphia (*Philadelphia Med. Times*, Jan. 23, 1875, p. 259 *et seq.*), and this was still five years before Laveran's discovery of the malarial parasite, in 1880.

Mills suggests that fluorescence may afford an explanation of

cinchonism. He remarks (p. 262): "The experiments of Jones and Dupré and of Rhoads and Pepper have proved that animal fluorescence is increased after the administration of the sulphates of quinia and cinchona. It has also been shown that fluorescence is decreased below a normal standard in malarial affections, and that it rises in the scale *pari passu* with the giving of the cinchona preparations and the improvement in the symptoms of the diseases."

Coming back now to the question proposed, viz: "With regard to the enigmatical curative action of quinine, is there any *peculiar relation of this substance with light* that would give us a clue to its explanation?" may we not answer that *fluorescence* furnishes such a clue, and that the experiments cited, as far as they go, at least *seem* to demonstrate that it is the fluorescent property of the cinchona preparations—as of esculin and fraxin—by which their curative effect can be explained? Possibly the same may be said of *all* assimilable substances—under suitable conditions—that fluoresce a violet or blue color. Some substances have a green, others a red, fluorescence. These we should not expect to have any curative influence in malarial disease.

It now remains to explain the cases in which quinine fails to cure, and I think we shall find—as is generally the case in tenable propositions—that "the exceptions prove the rule;" I mean the rule that the malarial organism will not sporulate in the dark, and further, that in the *dark* quinine cannot kill the parasite with fluorescent *light*.

In cases where quinine fails to cure, the malarial fever is not produced by the usual and typical tertian or quartan parasite, but by the so-called "*Malignant*," crescentic form, of which Manson (*Tropical Diseases*) gives three varieties, viz: (1) the estivo-autumnal, (2) the malignant quotidian and (3) the malignant tertian. He calls all of these crescentic forms "malignant infection," and says that "the malignant parasites alone form crescent bodies" (p. 65); that quinine "has apparently no influence on these bodies" (p. 66); they "may be found for days after the patient is cinchonized" (p. 44), or "after full doses of the drug continued for a fortnight" (p. 138).

The malignant parasite does *not* cause fever paroxysms but is usually associated with marked cachexia (p. 66); all of which is to be explained by the further facts that these crescent parasites

are not generally found in the peripheral circulation (pp. 15, 65, 85) where they can *get light*, but *are* found in the deeper viscera—liver and spleen—in the bone marrow, and in the capillaries of the brain, than which no *darker* recesses of the body can be imagined, and consequently where the fluorescent property of quinine *must* be impotent. When these parasites *do* appear in the peripheral blood, it is a sure sign that a paroxysm of fever is impending (p. 69), that is to say: having come out of their dark recesses into the red light of the peripheral blood, sporulation occurs, and with it the usual ague paroxysms. These quinine may arrest; but it cannot act upon parasites in the dark; thus the exceptions to the curative effect of quinine prove the rule that this cure is due to fluorescence.

My own idea of these malignant parasites is that they are *sickly* parasites—famine-stricken, perhaps—from the man's blood being over-stocked and anemic. The shrivelled blood *corpuscles* containing these half-starved parasites are *too small* to be arrested in the large cutaneous capillaries where they can get light, but *are* arrested in the small capillaries of the brain and other organs where it is dark.

We must remember that a normal blood capillary is just large enough to allow the passage of one blood corpuscle. Now, in a typical case of normal tertian fever the infected corpuscles are enlarged—sometimes twice as large as an *uninfected* blood globule—hence those that become arrested in the capillaries of the skin on account of their size, stay there, exposed to sunlight, until they break up by sporulation. With this sporulation occurs the ague paroxysm—chill, fever and sweat. But let us not fail to note the successive events that take place during these three stages. During the chill every arteriole of the skin is violently contracted—emptied of blood; hence pallor and coldness of the skin—and, as if to assist in the dislodgment of the infected corpuscles, and in their complete disintegration, the whole fabric of the man's body vibrates with a shaking chill.

During the second stage—that of fever—the cutaneous arterioles dilate again, even beyond the normal limit. Thus an actual congestion of the skin occurs; hence its red color and heat. Here a new crop of infected corpuscles will enter the peripheral circulation.

Next comes the *sweat*, during which a deluge of water is ex-

uded from the distended cutaneous bloodvessels, which causes them to contract, close in and shut down upon the new crop of enlarged infected blood globules, which thus become arrested and so remain until forty-eight hours' sunlight secures in turn their sporulation and the occurrence of another paroxysm.

Thus we might almost say that a typical case of regular tertian ague is a *functional disease or process of the skin*, during which the human organism is operating according to nature's laws—to secure perpetuation of species—in the interest of the parasite. Human blood is the only medium in which the perpetuation of this parasite can take place—I mean this variety of it.

The genus *homo* is certainly not a volunteer in this proceeding, but he is “drafted,” impressed into this service, in obedience to those curious devices and inexorable laws by which Nature so jealously and zealously regards race perpetuation in the lowest and most insignificant organisms.

If man remained in a malarious region for many generations—without clothes, fire, houses, and without antiperiodic medications—his race would eventually reach a compensative adaptive change which would pension him and render him and his progeny immune from further service in the interest of this parasite; they would become black from malarial melanosis; a black skin would give him color protection from the mosquito, or, having been found, bitten, and infected, the same non-translucent skin would prevent the admission of light and consequent sporulation of the parasite.

Thus viewing the malarial process, as naturalists, instead of medical practitioners, we find that even this *new point of view* presents confirmatory evidence of the *role* played by sunlight in producing the observed phenomena.

If the ideas I have presented be true, the following methods of prevention and cure would appear self evident, viz :

1st. Keep malarial patients in dark rooms, or in rooms with violet or purple windows; clothe them with garments impenetrable to light—in the tropics with white clothing lined with black, like the skins and coats of tropical animals. Whether with soldiers in the tropics, or in other malarious localities, the exposed face, neck and hands would require to be rendered non-translucent by the use of some harmless dye may seem fanciful, but it might be worth consideration under special emergent circumstances. In armies, possibly black or purple tents would be better than the

white ones now used ; or the white ones might be dark only on the inside.

2d. Render the blood dark or non-translucent by such remedies as blacken it—like gallic acid—or render it violet or purple by methylene blue and the like, or accentuate the violet rays in the blood by fluorescent substances, such as quinine, esculin, fraxin, &c. In cases of malignant infection build up the patient's blood globules by iron, food, &c., so that the small, half-starved parasites may grow into benign, big ones, large enough to be caught in the cutaneous capillaries, where they may sporulate in the usual way, and be destroyed in the usual way by fluorescent medicines.

If I have made the whole subject sufficiently clear and reasonable to incite experiments with sunshine, shade and colored lights by those who have opportunities so to do, the object of the paper will have been reached.

DISCUSSION.

Dr. Walter Reed, U. S. Army, said that he was much indebted to the Society for the invitation to participate in the discussion. A few years ago he would not have hesitated to criticise Dr. King's paper in a friendly way ; but as he had grown older he had come to have more and more respect for any theory which Dr. King proposed. He could not remember all the points advanced in the paper, but he could recall some. 1. Dr. King emphasized the fact that daylight was necessary for the sporulation of the malarial parasite, and advanced, in support of the statement, the fact that the chills of malarial fever almost invariably occurred in the daytime. He could not criticise this argument ; all of his own patients had had their chills in the daytime. This was a strong point in favor of the theory. 2. Dr. Reed could not appreciate the force of the statement that sporulation of the parasite took place in cold blood, *i. e.*, during the chill. Could we call blood at a temperature of 98, or even at 94, cold blood ? This temperature was favorable for the development of sporozoa. He also recalled that the red end of the spectrum from which Dr. King obtained the necessary light for the sporulation of the parasite was also the end of the spectrum that furnished the heat rays.

3. Dr. King claimed that the infrequency of malaria among negroes was due largely to the pigment in their skins. Dr. Reed was inclined to believe that the immunity of the negro was due, in part at least, to an odor which was unpleasant to the mosquitoes, and which kept them away. Investigators had found that malaria occurred less frequently in negroes after the age of ten years, and it was at this age that they took on permanently the

peculiar odor referred to. One hundred per cent. of negro children had been found affected with malaria in certain countries, *e. g.*, in New Guinea. Major Ross noted the same thing on the coast of Africa. But Dr. Stiles had said that the negro does not become as black as he is to be until his tenth year. If this was so, it tended perhaps to substantiate Dr. King's argument. We should not forget, however, that the immunity enjoyed by the negro is, after all, an inherited immunity.

Another point against Dr. King's theory was that if daylight were necessary for the sporulation of the parasite, we should naturally expect the process to go on less actively in the darker portions of the body; but, on the contrary, it was well known that in the æstivo-autumnal malaria sporulation took place in the internal organs such as the spleen. Dr. Reed could not imagine a much darker place than the interior of a negro's spleen.

An important part of the theory is the claim that the quality of fluorescence is concerned in the therapeutic destruction of the malarial parasite, because most remedies for malaria impart fluorescence to their solutions. He did not understand Dr. King to say that the remedies which do not have this quality do not necessarily fail to cure the disease. Dr. Reed had treated certain cases of malaria very successfully with iodine, and he was not aware that its solutions were fluorescent. If Dr. King's claim were correct, we should expect that *fluorescin* would be *par excellence* the remedy for malaria, as no other known substance gave such a degree of fluorescence.

In conclusion he commended the depth and acuteness of the reasoning which Dr. King used in support of his theory, and the great interest which attached to his paper. Dr. King in 1883, was a decade ahead of any other living man in advancing the theory that the mosquito was concerned in the propagation of malarial fever, and hence any new theory that Dr. King advanced was worthy of the most careful consideration.

Dr. Stiles referred especially to the similarity between malaria and surra. Surra is a specific febrile disease of horses, which is more or less prevalent in India and the Philippines, and is caused by a parasitic protozoon, *Trypanosoma Evansi* by name, which lives in the blood serum, and attacks and destroys the red blood corpuscles. The parasites are more numerous in the peripheral circulation during the rise in temperature, while they decrease in number or disappear when the temperature falls. There is more or less of a periodicity in the disease, but the fever attacks and intermissions are not so regular as in malaria. An interesting fact is that light-colored animals are said to suffer much more severely than dark ones. The disease is primarily a wet-weather malady, and is supposed to be transmitted by insects of the genus *Tabanus*.

Dr. Kober commended the paper, and raised a few points, more

to stimulate inquiry than to criticise Dr. King's theory. He did not believe that there was sufficient ground for maintaining that the negro enjoys even a comparative immunity from malaria. Physicians here and elsewhere had ample evidence that the disease existed in parts inhabited by the blacks. Many have observed malarial chills in coal-black negroes, and sanitarians have long known that the inhabitants of dark and gloomy places were especially liable to have malaria. While it was a fact that rains tended to check the spread of the disease, this was not necessarily due to the absence of sunshine. Before the mosquito theory was advanced, he (Dr. Kober) had claimed that it was due to the fact that the rain washed down the germs from the atmosphere to the ground and held them there until again liberated with particles of dust; but now we may accept the explanation mentioned by Dr. Ward or conclude that the rainstorms disabled the insects and interfered with their flight. Many cases of malaria were not cured by very large doses of quinine, doses large enough to cause a fluorescence of the blood. Malarial cachexia also persisted in spite of the ever-increasing pigmentation of the skin. These facts militated against Dr. King's theory. If it were correct, a patient would recover spontaneously from malaria if he were merely kept in a dark room. He hoped that the theory would be subjected to a clinical test and be confirmed, to the honor of Dr. King and the glory of the medical profession.

Dr. Keech said that he had lived for a long time in a malarial district, and had given much time and thought to the study of malaria. In the years between 1863 and 1868 almost every person living in the southeastern part of the city was infected with malaria. At that time he believed that the miasma entered the system by way of the nostrils, and even now he was inclined to doubt whether the mosquito deserved the important place in the etiology of the disease which it had been given of late. He believed that the germs lodged on the Schneiderian membrane, grew and multiplied and entered the system.

Many negroes were generally immune to malaria, but so also were many whites, even those of exceedingly fair complexion. The residents of malarial districts were, as a rule, less susceptible than visitors thereto. In the period above mentioned a relapse almost invariably followed improvement brought about by quinine. He often noted this, and cured his patients without a relapse by the administration of chinoidin and oil of black pepper.

Dr. King's paper was intensely interesting and very valuable, because, even if the theory did not prove to be correct, the paper stimulated research and brought out the opinion of men of large experience and learning.

Dr. Chappell said he would like to ask Dr. King what effect clothing had on the susceptibility to malaria. If Dr. King's the-

ory that light is necessary for the multiplication of the parasite is correct, the wearing of clothing, it would seem, would naturally tend to protect one against the disease, and the unclothed savage would be more susceptible than his civilized brethren, whereas the opposite has been shown to be the case. No doubt light and heat, too, are important factors in the development of the malarial organism; but Dr. King, in order to maintain his theory, must prove that *light* is an essential feature. In any case, the paper was very valuable, as it would stimulate thought and investigation. In order to confirm the theory it will only be necessary to keep malarial patients in a dark room to cure them.

Dr. Belt inquired as to the prevalence of malaria among miners.

Dr. Stiles said that while it was true, as a general rule, that malarial chills occurred in the daytime, there were exceptional cases in which they occurred at night. He thought that this occurred oftener than one in ten cases—the proportion given by Dr. King. He, himself, had had malarial chills at night.

Dr. King, in closing the discussion, said in reply to Dr. Reed, that he had spoken of the cooler blood of man only as being cooler than the external temperature of hot climates, and that therefore the extreme solar heat of tropical regions could not affect the parasite while the latter was submerged in its bath of human blood, the temperature of which, in health, was 98.2 F., while the external temperature might be from 100 to 110 F., or even more.

While the disagreeable *odor* of the negro might in a measure protect him from the mosquito (as stated by Dr. Reed) his *black color* also concealed him from the insect, at least in the woods and fields, though not, perhaps, when his body was rendered visible on the white sheet of a bed. The frequent infection of negro children in tropical regions with the malarial parasite, but without symptoms, Dr. King could not explain, but the fact reminded him that the bite of the tsetse-fly of Africa, which fatally infected adult cattle, was quite harmless upon the suckling calf, as attested by Burton, Livingston and others.

While Dr. King admitted that sporulating forms of the malignant parasite could be found in the spleen, the probability was that the *unenlarged* corpuscles containing them might have got light enough to secure this sporulation while passing through the peripheral vessels in the skin, hence such sporulation was perhaps a gradual or constant process rather than a periodic one; while the regular tertian parasite caused the blood corpuscles to become enlarged and thus arrested in the skin capillaries, where they remained until the entire group thus arrested underwent segmentation more simultaneously, and hence the febrile ague paroxysms. Manson tells us that the entire cycle of the tertian parasite goes on in the peripheral circulation.

Dr. King had made no study of iodine preparations as ague

cures, though there was an extensive literature upon the subject.* He doubted whether fluorescin would be curative, as suggested by Dr. Reed, because its fluorescence was *green*. It was the accentuation of *violet* rays (exactly opposite to the *red* rays of the blood), produced by the blue fluorescence of quinine, &c., that he supposed was detrimental to the parasite. A *green* light might be beneficial to some forms of amoebae, such, for instance, as made their habitation on the under surface of green leaves.

In reply to Dr. Stiles, Dr. King admitted that the views he had presented required experiments to disprove or verify them, as the case might be. He hoped that such experiments would be carried on during our next malarial season by those who had become sufficiently interested in the subject of the paper. Some malarial patients should be exposed, naked, to sunlight, and others kept in darkness or exposed only to violet light, and the result noted. He would like to have further experiments with light upon the parasite while in the body of the mosquito, where it obtained more sunlight, through the semi-transparent textures of the insect, than in the body of man. It might be this additional light that caused the evolution of the asexual forms into the higher sexual type. Would this take place if the mosquito, after having drawn blood, was kept in the dark?

The statements of Dr. Stiles with regard to *surra* in the horses of India and Manila were extremely interesting, but quite new to Dr. King, who would give them attention in future.

Dr. King thanked the members of the Society for the interest they had manifested in his paper, and for the complimentary manner in which they had been kind enough to speak of it, and which he feared was more than it deserved.

CASE OF CHOLEDOCHOTOMY.†

By I. S. STONE, M. D.,

Washington, D. C.

The operation known as "Choledochotomy" is still in its infancy. It was proposed by Langenbech in 1884; Parkes spoke of it in 1885; Kummel claims to have performed it in 1884, but with fatal result, and Courvoisier successfully performed it January 22, 1890, and again February 8 of the same year. Tait had learned to crush these stones in the duct by means of padded forceps, but he confined his surgical efforts chiefly to work upon the gall bladder and cystic duct.

* It may be mentioned that iodine in the body is likely to meet with starch and form the *blue* or *purple* iodide of starch, and thus act like the violet rays produced in other ways.

† Reported with the specimens to the Medical Society of the District of Columbia, Jan. 15, 1902.

In this country Fenger's paper was the first to attract attention, and he succeeded in taking and holding the lead by his persistent effort to perfect the operation. Mayo Robson, of England, is also famous for his success, and more recently Kehr has made a wonderfully good record with only 6.6 per cent. of mortality, while the mortality from all sources is yet high, namely, 37 per cent.

Mrs. J., age 30, white, weight in good health, 160 pounds; when seen by me, 110 pounds. Referred to me by Dr. Koonen. A history of previous ill health, including several abortions. Had been in hospital in this city in July, 1901, for jaundice and acute Bright's disease.

Present history.—Had had jaundice for 6 months, but not accompanied by pain; and no stones were ever found in the stools, although I do not know how much care was taken to find them. Persistent nausea and vomiting.

Operation December 11, 1901. She was etherized and placed in the reversed Trendelenburg position. Incision downward, five inches outside the right rectus muscle. Intestinal adhesions to surface of liver and gall bladder, were gradually separated without much bleeding. The stomach and duodenum were pushed to the left and kept in position by large sponges and assistant's hands. When the transverse colon was separated from the liver, it carried away a portion of the gall bladder, which was necrotic, revealing two stones. The gall bladder was firmly contracted around one of these stones and contained a small quantity of pus which was confined entirely to that locality. One stone was in the cystic duct, at its upper or outer end, and later in the operation a probe was passed into the duct showing the absence of other stones. The duct was friable like the gall bladder, and was badly lacerated by the necessary manipulations of the operation.

Much time was spent in separating the adhesions, clearing the cystic duct, and examining the hilum of the liver. But we were not satisfied with what had been done thus far, although far in excess of that usually required in cholelithotomy.

The jaundice was not due to the stones already found, and we made the necessary search for further obstruction, feeling somewhat divided in opinion as to the best course to pursue, fearing the possibility of malignancy.

Having always found it difficult to locate the common duct in operations for gall stones, we now located its lower end by follow-

ing the duodenum down from the stomach until we were near the point, one-half its length, where the duct should enter, and then with the left index finger in the foramen of Winslow, and lifting the hepato-duodenal ligament, the course of the duct was pretty clearly outlined and a stone was located about two inches and a half from the hilum of the liver and nearer the liver than the duodenum. It is worthy of note that without finding approximately the lower end of the duct, and without finding a stone in the duct, its exact course would have been difficult to ascertain. We should have been obliged, as in former cases, to have said, "We don't find a stone," and to finish the operation as best we might under the circumstances. But here we had the proof of the presence of a stone in the common duct. I did not know at first that there were two. The pulsations of the hepatic artery on the index finger were distinct, and although I could not see the portal vein, I knew it was very close and that any injury to either vessel would probably be fatal. After repeated attempts to press the stone upward into the hilum, where I could reach it with forceps, and also failing to crush it with fingers after the manner of Mayo Robson, or Tait, it was necessary to open the common duct and remove it.

It was not easy to hold still the stone and duct while incision was made for extraction. An enlarged gland was first mistaken for the stone, and was pushed aside and the duct opened between two catgut sutures inserted to hold the duct in view while other sutures were placed. The first stone located was easily extracted, and the second was found below the opening and forced upward from about one and a half inches above the duodenum. It was the largest of the lot, if my memory is not at fault. I did not find the duct so largely dilated, nor did I have the difficulty in extracting the stones that I thought probable from what Fenger and others had written. I do not think that exploration with the finger was possible in this case, either above or below the site of the calculi removed. I was content to use a uterine sound, and, while we are told that calculi are easily overlooked, hiding as they do in the ampulla of Vater, I succeeded in effecting complete removal of the obstruction. The condition of the patient near the end of the operation was not very satisfactory, and I confess to having felt some apprehension about the patency of the duct. However, these moments of anxiety will ever be felt by the sur-

geon in such cases until time removes all doubt. The absence of bile in the stools for the previous six months was not promptly overcome by the operation. Nearly two weeks passed before the presence of bile was announced. The closure of the duct with catgut did not occupy much time, and many sutures were not placed, for the reason that we did not care to prevent the escape of bile if by so doing the duct might be too tightly closed. The remaining work of placing tubes and gauze drainage did not require much time.

A word about the condition of the gall bladder. As stated before, it was torn away from the liver, being adherent to the colon. We hesitated to remove all the bladder from the bowel, for there was an ugly looking necrotic appearance which gave promise of rupture of the bowel at this point, hence we were obliged to leave a part of it attached, and as no perforation occurred, I think it was the proper thing to do. The drainage was placed as follows: One rubber tube down to the site of the incision in the common duct in front of the hepato-duodenal ligament. The other was placed below the site of the gall bladder, behind the transverse colon, nearly reaching the foramen of Winslow. Some surgeons have made counter openings to provide for such drainage posteriorly, but we did not think it necessary, and the result proves our course correct. A discharge of probably 2 drachms of thick, viscid bile appeared when the first stone was removed from the common duct, but we did not observe this when the cystic duct or hilum was sounded. But we were pleased to notice a very free discharge of bile through the lower tube which was placed below the cystic duct; the dressings being well saturated at each twice-daily dressing. The upper tube over the common duct began discharging on the fifth day, and we thought the sutures had torn out. This discharge ceased after about six days, and soon after this the tube was removed. The patient had casts in her urine until she had nearly recovered. Bile disappeared from the urine about one week after the operation.

After the drainage tubes were removed the patient rapidly recovered, and, January 18, she was about to leave the hospital apparently well save a small opening in the wound, the site of the drain tract, which discharged daily a few drops of thin, watery mucus.

As noted above, nearly two weeks passed before we were satis-

fied that the stools contained bile. But this was easily explained by the very free vent given the current of bile when the gall bladder was removed and the cystic duct practically torn away. When this was closed in by the healing process, the bile found its way readily into its proper channel. The patient made a very rapid recovery after bile appeared in the stools. Her appetite is enormous and she is rapidly gaining flesh.

DISCUSSION.

Dr. Carr said: No doubt the mortality, 37 per cent., given by Dr. Stone for this operation is correct, but I think it needs a little explanation. Unfortunately, most cases occur in old persons who have renal, cardiac or pulmonary complications or are atheromatous. It is dangerous to administer ether or chloroform to such persons for any purpose. I think a study of statistics will show that most deaths following choledochotomy have been caused by pneumonia, syncope, renal insufficiency or atheromatous cerebral lesions, and that the anaesthetic rather than the operation was the exciting cause.

In uncomplicated cases I consider the operation a remarkably safe one. This high death rate I presume includes also the earlier cases, when the technique was more imperfect and patients were kept longer under the anaesthetic than they would be at present. It is remarkable what easy recoveries are made by those patients who escape the dangerous complications I have mentioned.

I was glad to hear Dr. Stone speak of the difficulty of finding stone in the common duct. I have never had occasion to incise the gall ducts, but in removing stones from the gall bladder, I have found it extremely difficult to determine whether there were other stones occluding the common duct. I have no doubt the method described by Dr. Stone is valuable, and I shall try it when occasion arises; but I think we will always be more or less uncertain as to the presence or absence of stone in the lower end of the common duct where it lies behind the head of the pancreas, unless we discover some method of passing a probe through it into the duodenum. I think it probable that an extremely flexible probe—say a lead probe—could be so passed. I have passed an ordinary uterine sound through the gall bladder and cystic duct into the common duct, but was never able to get it nearer than about two inches to the duodenum. Even so experienced a surgeon as Halstead has overlooked stone in the common duct and has opened the duodenum to explore the lower end of this duct.

These cases, and a number of others that are extremely interesting, he reports in the *Johns Hopkins Bulletin*, No. 106, January 1900. There are many cases on record where stones, overlooked at the time of operation, have become loosened and worked back

into the gall bladder after the pressure of bile on them had been relieved by draining the gall bladder. I had a case last summer in which the gall bladder was so distended that I mistook it at first for the stomach. There was evidently some obstruction to the common duct, but no stone or stricture could be found. In a few days after draining the bladder bile appeared in the stools and the patient made a complete recovery. I think it likely that a stone was discharged through the drainage in this case.

Dr. Bovee said he had never operated for biliary calculi lodged in the ductus choledochus communis, but from his experience in surgery in this region he was prepared to believe it a very difficult operation. He believed a large number of gallstones escape from the gall bladder and ducts into the intestine by ulceration and fistula formation. The favorite point in the intestine for this fistulous exit is about two inches below the pylorus, and is called "the classical location of Roth." It is sometimes sufficiently large to admit four fingers. This fistula is by far most frequently connected with the gall bladder. Such gall bladder fistulae are probably formed for the passage of calculi much too large to enter the ducts, though it is easily understood that calculi may slough through the duct wall and nature guide them into the intestinal canal. Sometimes the biliary calculi found in the intestine have been prodigious, weighing 400 to 500 grains.

He had had a patient suffering from intestinal obstruction from one weighing 200 grains and having extreme diameters of $1\frac{1}{4}$ and $1\frac{3}{4}$ inches. This specimen was exhibited before a Medical Society in Chicago.

In another case he had found a fistula connecting the gall bladder with the vermiform appendix, and in the latter a biliary calculus. This specimen had been shown at a meeting of the Washington Obstetric Society.

However, we know many cases of biliary calculi do not terminate by passage of the stone by fistula into the bowel and escape from the latter, and they have to be subjected to surgical operation, which is by no means to be placed in the hands of the tyro in abdominal work.

He congratulated Dr. Stone on his successful and, so far as Dr. Bovee knew, first choledochotomy in the District of Columbia.

CASE OF EXFOLIATIVE DERMATITIS DUE TO
QUININE.*

By E. W. REISINGER, M. D.,

Washington, D. C.

December 27, 1901, Mrs. C. called at my office and requested something for her husband, "who had the grippe." I inquired into his symptoms and "agreed" in the diagnosis, so prescribed six tablets, each containing acetanilid 92.i, salol 92.½, quin. bi-sulphi. 92.i, to take one tablet every three hours.

Twelve hours later, December 28, I was called to see Mr. C., and obtained the following history :

Mr. C., white, age 45, Pullman conductor, took as directed the prescription I had sent him ; two hours after ingestion of the second tablet (two grains of quinine altogether) the skin of his entire body began to itch, became red and swollen and had a drawn feeling. He suffered so much from the *intense* pruritus that he was greatly depressed, in fact, spoke of ending his life, and was unable to sleep or even remain in bed. Desquamation had set in when I saw him, his head and body being covered with fine scales, but his hands and feet were still red and swollen and had a dry, glossy appearance. He complained greatly of the "drawn" feeling over his entire body, as if his skin was too tight for him, as in fact it was. I diagnosed his case as "erythema due to quinine"—gave a cooling lotion internally, a carbolic acid wash for the itching, and stopped the tablets. Two days later his hands and feet shed their epidermis and I secured a specimen which is a perfect "palmar surface of the left hand ;" his right hand and both feet lost their cuticle in large casts but not nearly so perfect. It took him at least a week to entirely recover, as his feet and hands were very tender after the desquamation.

Looking over the literature on this subject, I was struck by the smallness of the dose of quinine in similar poisonings and the few adult male cases reported. For instance, Dr. H. C. Wood, in his *Therapeutics*, says "a few grains of quinine" will produce erythema, etc. ; he does not mention an adult case or one of exfoliation. Dr. B. D. Tillow (*N. Y. Med. Record*, 1898) reports violent

*Reported, with specimen, to the Medical Society of the District of Columbia, January 22, 1902.

erythema in a woman from one-third of a grain, but dermatitis was not followed by desquamation. Dr. T. C. Johnson (*Jour. Cutan. and Genito-Urinary Dis.*, 1896) reports a case of a man who had two attacks, the first due to four grains of quinine and the second due to two 15-drop doses of compound tincture of cinchona—*i. e.*, about 3-20 of a grain of quinine. Dr. Morrow (*N. Y. Med. Jour.*, 1880) reports sixty cases of "quinine poisoning." He also found that small doses caused the erythema, but all his cases, except one, were either children or women, the exception being a man, who did not exfoliate.

I would especially call attention to the following points in this case: The age and sex, the completeness of the exfoliation, the severe mental symptoms, the intensity of the pruritus, and, lastly, the small dose. I should advise a constant inquiry for such idiosyncrasies, as the poisoning is as liable to occur from small as from large quantities of the drug, and I wish to recommend a weak solution of carbolic acid for the itching, as it was most effective.

DISCUSSION.

Dr. McLaughlin said the specimen was interesting and instructive. Quinine is so universally used that it is wise to call attention to the untoward effects which occasionally follow. In this case the type of disease was erythematous, but vesicles, wheals, bullae, and other skin manifestations were sometimes seen. Several theories have been advanced to explain the development of these rashes. Quinine, by its irritating effect upon the gastric mucous membrane, stimulates the sensory nerves, and by reflex action produces a dilatation of the cutaneous vessels. Again, as quinine is eliminated by the sweat glands, a local irritation through these channels is excited.

Untoward effects were frequently exhibited by workers in quinine, and the eruption has followed the local application of hair tonics containing the drug. The effect was due to an idiosyncrasy, as from the use of opium, mercury and other drugs.

About ten years ago he had reported a case in which a rapid exfoliation of the skin followed the ingestion of a drachm of compound tincture of cinchona. Several similar cases had recently been reported in a medical periodical. The physician should always bear in mind the possibility of idiosyncrasy, and he should make inquiries before prescribing quinine, opium, arsenic and other drugs which were known to produce such peculiar effects in some individuals. Morrow has called attention to the possibility of some eruptive fevers, supposed to have occurred a second time, having been due, perhaps, to this drug.

Dr. Magruder said that the specimen was instructive because it directed attention to the evil effects which follow the administration of quinine in some cases. The physician should be on the alert for idiosyncrasy. Here, the patient not only lost time from his work, but the results were very serious. Dr. Magruder had more than once avoided making an awkward mistake by questioning the patient indirectly in order to ascertain whether an idiosyncrasy existed. In one case the ingestion of two doses of two grains each of a salt of cinchona had been followed in two hours by a marked general oedema which lasted for several days. Later in the same year he forgot the incident and ordered the drug for the same patient a second time with similar results; in addition there was intense itching but no desquamation.

Dr. T. C. Smith said that Dr. Erbach had reported a case of exfoliative dermatitis, some years ago, somewhat similar to Dr. Reisinger's, which was thought to have been due to scarlet fever. He inquired whether it might not have been due to the ingestion of quinine.

Dr. J. Dudley Morgan also asked whether this erythematous rash might not be mistaken for scarlet fever. It was very important that no mistake in diagnosis be made.

CASE OF FATAL HEMORRHAGE FROM STOMACH DUE TO CANCEROUS ULCER.*

By T. C. SMITH, M. D.,

Washington, D. C.

Mr. H., age 70, wheelwright, consulted me but a few days before his death, for dyspeptic troubles which had annoyed him for several months, but had not kept him from his work. I was called to see him at 10 P. M., Jan. 16, 1902, and learned that he had been doing his usual work during the day. About 9 P. M. he had gone to his room to retire and had a profuse hemorrhage from the stomach, became unconscious and fell to the floor. When I arrived he was lying in bed vomiting blood in considerable quantities, and, judging from the vessels shown me, he must have ejected more than a quart. He was almost pulseless. I gave him a hypodermic injection of strychnia and nitroglycerin, and ordered suprarenal extract in powder, with opium, by the mouth. Next morning I found him comfortable, with a fairly

* Reported with specimen to the Medical Society of the District of Columbia, Jan. 22, 1902.

good pulse, and desiring food. There had been no more bleeding after he commenced to take the suprarenal extract. On calling about 6 P. M., I learned that he had died quietly at 5 o'clock, and without further hemorrhage.

When he called at my office I realized that cancer might be looked for in a person of his age, with the symptoms of which he complained, but a careful examination failed to show the presence of a tumor. The post-mortem examination made by Dr. D. S. Lamb revealed a cancerous ulceration which had opened a bloodvessel large enough to produce the fatal hemorrhage. The case is reported to illustrate a phase of cancer of the stomach in which characteristic symptoms are in abeyance, the true nature of the disease not being known until revealed by the autopsy.

Dr. Lamb said that the stomach showed a thick "cauliflower" growth involving the cardiac half of the stomach and lowest part of the oesophagus; the growth was cancerous, was deeply ulcerated, and in one place near the cardiac opening was a bloodclot plugging up the vessel from which the fatal hemorrhage had occurred. The remaining half of the stomach was stained red with its fluid blood contents, but was otherwise normal except for a patch of thickened, ulcerated mucous membrane near the lesser curvature, which was probably of the same nature as the already mentioned growth. Lymphatic glands of stomach and lower oesophagus enlarged.

DISCUSSION.

Dr. Lamb said that the case afforded an illustration of cases of cancerous disease of the cardia in which no history could be obtained. There was no obstruction to swallowing, and no symptoms other than those which would naturally arise from indigestion. The case was also interesting in that it pointed out the possibility of fatal hemorrhage in cancer of the stomach, although he believed that this accident occurred but rarely.

Dr. Magruder had recently had a case similar in some respects to that of Dr. Smith. His patient had been attending to business as usual without any symptoms that would indicate serious organic disease of the stomach until he had a violent hematemesis. It is true that he did have from time to time feelings of malaise and apathy toward his work, and occasionally neuralgic pains darting around the right side like pleurodynia, which were readily controlled by simple treatment. He had not been confined to the house. There had been for years an inability to digest one or two articles of food which would invariably cause a mild vertigo. He

called at Dr. Magruder's office just before five o'clock, complaining of feeling more languid than usual, and of pain in right side of chest above the liver. He afterward walked several squares to his home, and as he entered his bedroom, without any warning, blood gushed from his mouth in large quantities; at the same time there were involuntary evacuations of dark clotted blood from the bowels. The response to treatment was prompt, but the resulting anemia was most pronounced. There was a temporary improvement under careful nourishment both by mouth and rectum, as was shown by the blood count and tests for hemoglobin. There was no recurrence of hematemesis for a little over two months. Then suddenly it came again very violently and with severe pain, which had to be controlled by hypodermic injections of morphia. A third hemorrhage occurred a short time afterward from which he did not rally. He died in less than three months from the first hemorrhage. This case, like Dr. Smith's, is interesting from the absence of any marked symptoms directed to the stomach until the supervention of the hemorrhage.

The autopsy, July 14, 1901, showed the following conditions: Profound anemia, but the body well nourished, with abundance of fat. Stomach small (contracted,) pylorus normal; along lesser curvature and in adjacent omentum were many cancerous nodules, and firm, dense, thickening and marked necrosis; no secondary growth in liver or intestines.

Dr. Reed said that the cases reported by Drs. Smith and Magruder illustrated the fact that well-developed cancer of the stomach might exist and yet cause no symptoms, except slight pain, provided there was no obstruction at the pyloric orifice. He emphasized the importance of blood examinations as an aid to diagnosis in these cases.

CASE OF CANCER OF LUNGS, SPLEEN AND RIBS.*

By C. W. FRANZONI, M. D., B. P.,

WASHINGTON, D. C.

M. D. P., physician, age 59, for many years was treated by Dr. Franzoni for weak heart. In 1890 he smoked immoderately, and had intermittent pulse, and at times a faint bruit. As early as 1892 had paroxysms of severe palpitation of heart, with profuse urination; specific gravity as low as 1010. These paroxysms recurred at intervals until his death. From about 1895 he had recurring intercostal neuralgia. In January, 1900, the palpitation and hyperurination became more frequent; he passed from 50 to

* Reported with specimens to the Medical Society of the District of Columbia, Jan. 29, 1902.

70 ounces of urine in a few hours. In April he began to use electricity, and continued to do so from time to time during the remainder of his illness. October 20 he began to cough, and this cough continued throughout the remainder of his illness. October 30 he weighed 198 pounds. In December the cough was worse. In January, 1901, he occasionally had sinking spells, and the sputa became purulent. February 15 he began to have distinct pain in the right side, occurring at first at intervals, but gradually becoming more frequent until it was almost continuous and also more severe, preventing sleep; had also night sweats. In March the sweats and pain continued—sometimes pain in both back and side. March 15 Dr. Franzoni noticed dullness over lower lobe right lung, due to old adhesions. March 20 the pain was distinct in lower lobe right lung. In April the pain was severe, sometimes sharp; prevented him lying on his right side. From April 16 to 20 he had herpes zoster, with much pain. He became gradually worse, and died October 25.

The necroscopy was made by Dr. D. S. Lamb. Body emaciated. Both lungs everywhere firmly adherent. Left lung oedematous and darkly congested posteriorly. Right lung generally anemic, showed large, irregular, somewhat firm, whitish-yellow masses, the largest involving the posterior pleural margin; mucofibrinous casts in bronchi. Bronchial glands enlarged, whitish-yellow and pigmented. Attached to the 5th to 10th right ribs inclusive, and extending from the bodies of the corresponding vertebrae outward to about 5 inches from the costal cartilages, was a whitish tumor which in places crumbled under pressure; this mass was covered in front by pleura, behind by the muscles of the back, and filled the corresponding intercostal spaces and pulmonary fossa. The right sides of the bodies of the vertebrae named were carious as also were portions of several ribs. All the ribs were friable. Heart 15 oz. fatty; valves normal. Slight atheroma of ascending aorta. Liver large, somewhat fatty. Spleen 12 oz.; dark and firm; slight adhesions; showed a large, whitish-yellow, irregular, wedge-shaped mass, somewhat elevated above the general surface. Pancreas normal. Stomach contracted. Kidneys somewhat enlarged and congested.

Dr. Lamb said that the salient points of the case were that, after a history of years of paroxysms of palpitation of heart and hypersecretion of urine, with occasional intercostal neuralgia and indi-

gestion, which, however, did not clearly appear to be related to his final illness, a cough was noticed October 25, 1900; the sputa became purulent, in January, 1901; pain was complained of more definitely in February, when also there began to be night sweats, and February 20 the pain was felt apparently in the lung itself. He died just about one year from the day the cough was first noticed.

DISCUSSION.

Dr. Franzoni stated that the diagnosis of cancer of the ribs had been made by Dr. W. W. Johnston, who was called in consultation.

Dr. Johnston said that he was consulted late in the course of the disease, and the diagnosis was, therefore, made without difficulty.

Dr. Borden emphasized the value of the X-ray in making a diagnosis in cases like this.

CASE OF REMOVAL OF PORTIONS OF OVARY.*

By J. W. BOVÉE, M. D.,

Washington, D. C.

White girl, aet. 17. History of pain in the left iliac region for a year. Examination showed the uterus of normal size but pushed to the left; fluctuating mass in right iliac region extending down into pelvis and up to umbilicus. This tumor was removed, and proved to be a simple ovarian cyst. The interest in the case centered in the left ovary which contained two fairly large cysts, but there was also some normal ovarian tissue on one side. Hence he did not remove the ovary but dissected out the cysts, leaving enough normal ovarian tissue to render impregnation a possibility.

DISCUSSION.

Dr. J. Taber Johnson said that the conservatism which Dr. Bovée had shown in leaving portions of healthy ovarian tissue in some of his operations was commendable. This might be done oftener but for the fact that the dissection required considerable time and the time could not often be spared. There was also greater danger of traumatism because of the additional manipulation required, and this might give rise to symptoms sufficiently

*Reported with specimen to the Medical Society of the District of Columbia, January 29, 1902.

serious to necessitate a second operation. Price, of Philadelphia, reported that he had many times been obliged to do over again the "conservative" work of other surgeons. If the operation was a success, well and good, but if it failed, the surgeon was very likely to wish that he had used a more radical method.

Dr. Bovée said that great caution and precision were necessary for successful conservative surgery upon the ovary. The technique must be especially adapted to the principal end in view, namely, the avoidance of injury to the tissues; the needles and sutures must be of proper size, the sutures must be properly placed so that there may be no oozing around them, the suture material must be carefully selected and the tension used in tightening the stitches carefully gauged.

THE CAUSATION OF DISEASE.*

By GEORGE M. KOBER, M. D.,

Washington, D. C.

The direct or exciting causes of disease have been a source of much study and speculation. Thanks to the progress of medical science, the field is now limited to certain chemical, physical, mechanical and vital agencies capable of producing definite pathological lesions and clinical manifestations. Among the chemical causes of disease, we recognize: 1st. Those originating without the body, of an organic and inorganic character, commonly known as irritants or poisons, including the poisons of venomous reptiles. 2d. Those originating within the body as a result of malnutrition, malfermentation and other defects of metabolism and physiological function. The nature of these compounds is as yet somewhat obscure, but according to Abbott "they represent most likely intermediate products in the processes of nutrition which through physiological defects are not completely elaborated, and which in this state and under the existing conditions of physiological enfeeblement are endowed with poisonous peculiarities; also, the ordinary end-products of tissue activity that have accumulated within the system as a result of structural lesions of the secretory and excretory organs; and equally as important as either of the preceding, the toxic products of malfermentations, often in operation within the alimentary tract."

* Read before the Medical Society of the District of Columbia, February 12, 1902.

Among the most frequent direct physical causes of disease are excessive heat, cold and moisture, while the mechanical causes are both predisposing and in case of accident, exciting.

Vital Causes.—By the term vital causes of disease, we understand certain living animal and vegetable parasites, capable of reproduction in the body and, under favorable conditions, of producing pathological lesions and serious disturbance of the vital functions, which result not infrequently in local or complete death of the host. It matters little whether the living organism is large or small, or belongs to the vegetable or animal kingdom, or whether it produces its pathogenic effects in the skin, muscles, lymphatics, viscera, intestines or in the blood, its introduction and reproduction constitute infection.

Before discussing the germ theory of disease, it may be well to state that the disturbances which result from the invasion of the body by animal parasites vary with the character, life cycle and location of the invading organism. We have simply to recall the nutritive disturbances and nervous symptoms produced in taeniae, the profound anaemia which results from the blood-sucking parasites which attach themselves to the upper part of the small intestines in the disease known as ankylostomiasis, the alarming symptoms associated with occasional obstruction of the lymphatic channels by the filaria sanguinis hominis or its embryos, the suppuration and ulceration consequent upon the lodgement of the guinea worm in the subcutaneous tissues, and the disturbances caused by the presence of cysticerci in the central nervous system and organs of special sense.

Of far greater importance to us, however, are the so-called invisible foes, or vegetable parasites, and bacteriology enlightens us as to the nature of these micro-organisms, describes minutely the various forms of bacteria, fungi and molds, their morphology, biology and behavior toward other organisms, and demonstrates to what extent they are instrumental in the production of disease.

While some of the ancients probably entertained the view that diseases may be caused by living organisms, it was generally assumed that they were caused by miasma or contagia. A miasm in the minds of these physicians constituted some hypothetical matter, formed outside of the system, which contaminated the air and gained admission in the respiration and then produced pathological conditions. Another class assumed that many of the in-

fectious diseases were caused by a contagium, by which they understood a material generated within the body of a person affected with a certain disease, and capable of producing the same disease in others. The contagium was presumed to be communicable by immediate or mediate contact, but they failed to isolate the specific agents or to demonstrate them to our senses. The invention of the microscope, however, stimulated research in this direction, and we are told that a Jesuit priest, Kircher, in 1671, was the first to investigate putrefying meat, milk and cheese, and found very "minute living worms therein." Four years later Anthony Van Leeuwenhoek (1668-1675), after improving his lenses, discovered in rain water putrefying fluids, in the saliva and intestinal contents "minute moving living particles which he called 'animalculae,'" and, since they are identical with what we call to-day bacteria, the honor of discovering these organisms may be divided between Kircher and Leeuwenhoek. For some time the medical profession was strongly of the opinion that these animalculae might be the cause of all disease. Among these were Pleincz, of Vienna (1762), and Lancisi, who believed that miasmatic diseases were caused by minute organisms which entered through the nose, mouth and pores of the skin and produced their pathogenic effects by causing an alteration of the vital fluids. As a matter of fact, Moscati, over one hundred years ago, tried very hard to demonstrate the nature of malaria by condensing the moisture of the air over rice fields and malarial regions, and although certain organisms were found, all efforts proved useless to connect these with the causative factor of malaria, and thus the real nature remained unexplained until 1880. In the middle of the nineteenth century Donné demonstrated the presence of vibriones in syphilitic pus, and about the same time Cagniard Latour and Schwann determined the vegetable character of yeast, and Bassi the cause of muscardine in one of the mushrooms.

It is not surprising that with the discovery of animalculae, the theory of spontaneous generation should have come to the front until finally disposed of by the experiments of Pasteur, Tyndall, Koch and Cohn (1876), who have conclusively shown, that every living thing, be it man, beast, plant or cell, must come from some preexisting living thing. In 1840 Henle ventured the opinion that the morbid matter of all infectious corpses was of a living, organized character; and in order to determine whether the cad-

aver poison was produced by microorganisms, he strongly urged to search for such organisms in the bodies of those affected with infectious diseases, and, if possible, to isolate them and establish their respective characters. This awakened a most earnest desire to determine whether or not organisms could be found in the bodies or excretions of infectious patients which might be the carriers or agents of the respective virus. Very soon after this announcement, Davaine discovered the cause of anthrax ; he found in the blood of animals suffering from splenic fever, certain rod-shaped organisms, which, in 1855, were confirmed by Pollender and Brauell. These observers also demonstrated the fact that the blood of such animals inoculated into other animals produced the disease in question, and the blood of animals thus inoculated likewise contained the peculiar rod-shaped organisms. Pasteur, in 1877, finally proved that inoculation of blood, which had been freed from these organisms, failed to produce anthrax. This led to the natural conclusion that there was a causative relation between these rod-shaped organisms and the disease in question.

In the beginning of the seventies, Waldeyer, v. Recklinghausen, Weigert, and others discovered a number of microparasites in the internal organs and wound secretions of various surgical infectious diseases, and Obermeier discovered the specific microorganism in the blood of relapsing fever patients. In 1876 Koch published his researches on the etiology of splenic fever and anthrax, and the simple methods employed by this author in the detection and cultivation of disease germs resulted in rapid succession in the discovery of many other pathogenic bacteria, viz : the tubercle bacillus by Koch, the bacillus of glanders by Schütz and Loeffler ; the lepra bacillus by Hansen and Neisser ; the gonococcus, the cause of gonorrhoea and blenorrhoea ophthalm., by Neisser ; the comma-bacillus of cholera by Koch ; the micrococcus erysipelatis as the cause of erysipelas by Fehleissen ; the tetanus bacillus by Nicolaier ; the bacillus of hog cholera by Pasteur and Roux ; the staphylococcus pyogenes aureus, albus and citreus the cause of suppuration by Ogston and Passet ; the bacillus of chicken cholera by Pasteur ; the lancet-shaped pneumococcus by Sternberg and Fränkel as the cause of lobar pneumonia, and which may also be the cause of cerebro-spinal meningitis, acute endo- and peri-carditis, peritonitis, suppuration of the middle ear and circumscribed abscess ; the bacillus of typhoid as the cause of typhoid fever ; Loeffler's bacillus

as the cause of diphtheria, and the plasmodium malariae as the cause of malarial fevers.

The amoebae of dysentery were first seen by Lambl in 1859 and in 1875 by Lösch, in 1883 by Koch, and more accurately identified by Kartulis in 1855 and Uplavici in 1887, and we are especially indebted to Osler, Councilman, Lafleur and Dock, of our own country, for our knowledge of the pathogenic properties of this organism. In addition to the amoebae, a bacillus has been found in a sufficient number of cases by Ogata, in 1892, Shiga, in 1897, Flexner, in 1899, and Strong and Musgrave of the U. S. Army, to indicate that there is also a bacillary form of dysentery, and these two varieties have recently been described by Dr. W. W. Johnston, of this city, in a most exhaustive paper.

The bacillus of influenza was discovered by Pfeiffer, in 1892. The presence of an amoeboid organism in the expectoration of whooping cough has been reported by Deichler and Kouslow, while Koplik, in 1897, described a bacillus first seen by Afanassjew in 1887. So far, however, we have no definite knowledge which of the several microorganisms reported is the cause of whooping cough. In 1894, Kitasato discovered the specific organism of the Oriental or bubonic plague. The evidence as to the cause of puerperal fever is conflicting, but points to the fact that it may be caused by a number of organisms, especially the streptococcus, and it is believed that this microbe, as well as the staphylococcus, may give rise to diseases of the throat resembling diphtheria, and may also play an important role in the production of scarlet fever, blood poisoning, abscesses, etc.

Koch has laid down certain conditions, upon the proof of which alone it can be asserted that a particular microbe is the cause of a certain disease. They are :

1. The micro-organism must be found in the blood, lymph or diseased tissues of man or animal suffering from, or dead with, the disease.
2. The micro-organisms must be isolated from the blood or tissues and cultivated in suitable media outside the animal body, and these pure cultivations must be carried on through successive generations of the organism.
3. A pure cultivation thus obtained must, when introduced into the body of a healthy animal, produce the disease in question.
4. In the inoculated animal the same micro-organism must again be found.

It has been shown beyond a doubt that some of the organisms

are the causative factors of communicable diseases, and this is a strong argument in favor of those in which the proofs are not yet conclusive. For obvious reasons the inoculation of pure cultures cannot be applied to man, but in diseases which are interchangeable between animals and man, the complete sequence of proof has been established, and the successful inoculation of certain disease germs into healthy animals certainly warrants the assumption that similar results will take place in the human system. The proof is conclusive in septicaemia, anthrax, suppurative processes, in diphtheria, glanders, gonorrhoea and tuberculosis; partially complete in cholera, typhoid fever, malaria, leprosy, amoebic dysentery and some other protozoal diseases.

In malaria, amoebic dysentery, relapsing fever, leprosy, and possibly syphilis, certain microorganisms, are constantly and exclusively present, but they have not been isolated in culture and the diseases have not been satisfactorily reproduced in animals. All efforts have so far failed to discover the specific agent in yellow fever, measles, scarlet fever, small-pox, varicella, mumps, dengue and typhus fever, but it should be remembered that apart from the great difficulty of isolating the protozoa, which are the lowest forms of animal life, some of the undiscovered organisms may be ultra-microscopic. Under the microscope, we see that the bacteria or shizomycetes are made up of unicellular organisms containing slightly granular matter and surrounded by a somewhat denser envelope; they are so pale and translucent that they can only be distinctly recognized by staining them.

The bacteria may be spheroidal, ovoidal, rod-shaped, or spiral-shaped, and have been named according to their form. All spheroidal bacteria are called micrococci, or simply "cocci." If they cling together and form chains, they are called streptococci; if they are grouped together in a rather irregular manner, like a bunch of grapes, they are called staphylococci. Of the rod-shaped bacteria, the most common genus is called bacillus. If they are rather slender and delicate, they are called leptothrix. If they have the form midway between the round and rod-shaped bacteria, they are spoken of as cocci-bacilli or cocci-bacteria; the spiral or cork-screw bacilli are called spirillae, and the curved bacilli are spoken of as comma-bacilli.

Reproduction.—Like all living forms, bacteria are able to reproduce, provided they find a suitable soil; they need warmth, moist-

ure, carbon, nitrogen and salts, and quite a number, oxygen also. The majority cannot exist in highly acid nutrient fluids, but prosper best in neutral and faintly alkaline media. It has also been demonstrated that they vary considerably with regard to their food; some flourish in certain media, where others find it hard to live. A supply of air is not essential to all forms; some, however, cannot develop without it and these are called *aerobes*; to others air acts detrimentally and they are classified as *anaerobes*; whilst to still others the question of air is a matter of indifference, and they are termed *facultative anaerobes*. The majority of bacteria grow best at a temperature between 60 and 104 F.—disease germs, as may be expected, develop best at a temperature of 98.2.

The vitality of some bacteria is destroyed at the freezing point, others remain alive even in ice for a long period. The majority are destroyed by a temperature of above 167, or exposure to direct sunlight. The spores, however, are more resistant to the influence of heat and cold, although a temperature of 250 is quite likely to kill all forms of bacteria and their spores.

When favorable conditions are present the process of reproduction is so rapid that a single germ, by growth and subdivision, may give rise to over sixteen millions of similar organisms within twenty-four hours; they multiply either by transverse fission or by spore formation. In fission the microbe divides into two parts, each of which lives and divides in its turn; others divide into three parts simultaneously. Some forms, however, do not fall apart, but cling together, forming threads or chains of varying lengths, or clumps or masses.

In the spore formation we have to deal with internal spores and joint spores. In the former the protoplasm is seen to contract into one or more refracting bodies called spores, the membrane of the bacillus breaks up and liberates them, and they germinate into new bacilli. In joint spores the entire cell is detached and becomes transformed into a spore, which is capable of germinating some time afterward.

Saprophytic and Parasitic Bacteria.—When the bacteria derive their food from dead substances they are called saprophytes; if they prey upon some living organism, they are called parasites; if they can only live upon the latter, they are termed obligate parasites; and if they can live also upon dead matter, they are distinguished as facultative parasites. Disease germs are classed

with parasites, since they multiply in the system. While many of the saprophytic germs may also produce disease, the majority are harmless and subserve many important and useful purposes in nature, as in the process of fermentation, such as lactic fermentation, ripening of cheese, etc. ; they also play an important part in oxidation, nitrification and putrefaction, and are, in fact, nature's scavengers, in this, that they destroy dead matter by feeding upon it and split it up into simpler compounds, which serve as nutrition for higher vegetable or animal cells. They are absolutely indispensable to the agriculturist, especially in the upper layers of the soil in the great laboratory which supplies the food for growing plants. It has recently been shown that by the instrumentality of bacteria plant life is enabled to obtain a portion of nitrogen from the air and store it up in the form of vegetable proteids, especially in the leguminosa.

Bacteriological studies have also shown that, as the bacteria grow, they set free various chemical compounds—the result of their own life processes—chief of which are the ptomaines or toxins ; they also liberate some of the amido-compounds of the aromatic series, and ammonia, taurin, fatty acids, hydrogen sulphide, carbon dioxide, carburetted hydrogen, and other stinking gases, not yet determined.

The subject of ptomaines is to us of special importance, because it is believed that these alkaloids, closely resembling the vegetable alkaloids and not the bacteria themselves, produce pathological lesions ; so for example the cavader poisons, such as cholin, neuridin, neurin, cadaverin, putrescin, are the products of bacteria ; ptomaines have also been demonstrated in decomposing milk, cheese, meat and fish, and last, but not least, in the culture fluids of certain pathogenic germs, such as the bacillus of typhoid, cholera, tetanus, diphtheria, tuberculosis, etc.

Habitat of Bacteria.—From what has been said it will be readily understood that bacteria are widely scattered and are found wherever organic life exists, in fact, they are present in all the media with which we come in contact, *i. e.*, in the air, water, soil, food, the wastes of human life in the excretions and secretions, on the surface of man, animals, plants, etc. Disease germs, however, are not ubiquitous, as many are fortunately limited to certain localities and media.

The possibility that certain disease germs like those of typhoid

fever, cholera, anthrax, tetanus and malignant oedema may proliferate in soil has been shown, and we can readily appreciate how they may be spread through the ground water, direct contact, through pulverized soil, earth worms and the work of man in excavations.

Dissemination of Disease Germs.—It is not surprising that many of the disease germs should be transmitted in articles of food. The bacilli of tuberculosis, of anthrax, and other bovine diseases have been found in the meat and milk, and the writer has tabulated 195 epidemics of typhoid fever, 99 of scarlet fever and 36 of diphtheria spread through the milk supply. The germs of typhoid fever may gain access from fertilizers to strawberries, radishes, lettuce and other vegetables which are eaten raw, and it is also conceivable how insects and the fingers of man may be instrumental in infecting articles of food. Apart from these, clothing, bedding and personal effects are common means of spreading infectious diseases. Man himself is often the cause of spreading disease germs; he certainly propagates venereal diseases, and the same is true of other infectious diseases, especially when he mingles with the public, as in tuberculosis, and the ambulatory form of typhoid fever, not to mention the spread of scarlet fever, measles, diphtheria, small-pox, etc., by patients, convalescents and infectious corpses. Perfectly well persons may carry the germs in their clothing and infect some distant locality. The influence of rats in carrying the germs of bubonic plague has recently been emphasized. Insects, especially flies, are doubtless frequently the cause of spreading disease germs; they are usually present where the existence of germs may be suspected and feed upon or wade over the very material likely to contain them. As a matter of fact, Celli, of Rome, in 1888, demonstrated that the bacilli of tuberculosis, of anthrax and of typhoid fever, as well as the micrococci of pus, retain their virulence after passing through the intestinal tract of flies. Spillman and others have demonstrated that flies caught while feeding upon the sputum of consumptives invariably contained viable bacilli, and Hoffmann not only confirmed these observations, but also found them in the fly spots on the walls or rooms of phthisical subjects. I have declared it my opinion for years that flies played a prominent role in carrying the germs of typhoid fever from infected dejecta to the food supply, and in 1895 pointed out a number of house infections in this city which could

not be explained in any other manner, and the experience of the Spanish-American War appears to have fully confirmed this conclusion.

It has been shown that the plasmodium malariae and the filaria sang. hominis are propagated by the agency of a certain species of mosquitoes, and Drs. Reed and Carroll have recently shown that yellow fever is doubtless spread in a similar manner.

Origin of Disease Germs.—The origin of disease germs is as obscure as the first origin of any creature. Bacteriology and comparative pathology, and such brilliant researches as have been made by Reed, Carroll, and others may aid in solving this problem, for by tracing infection from animal to animal, there is a possibility that at last some lower order of animal may be found the starting ground of fatal infections for higher orders. Again it may be possible that all germs are primarily harmless, but have acquired virulence by suitable environments, especially since variations both of form and function are known to occur under the influence of a variety of conditions. So, for example, the bacillus coli communis, a harmless saprophyte of the intestinal contents of man and the lower animals, may, under suitable conditions, exhibit pathogenic properties. The same may be said of the pneumococcus first discovered by Sternberg in his own saliva and the buccal secretions of a large proportion of healthy persons, and similar observations have been made with certain pyogenic organisms which exist as innocent saprophytes on the skin until under the influence of predisposing factors they become the cause of a variety of pathological lesions.

The studies which have been made in regard to increased and diminished virulence of disease germs under the influence of changed environments, or by the action of physical and chemical agents, are of interest in this connection. So, for example, it has been shown that the virus of hydrophobia is attenuated by its passage through the bodies of monkeys, and the same may be said of the virus of small-pox after its passage through the cow, and of the virus of cow-pox after repeated passage through the human organism.

Pasteur, Koch and others have shown that exposure of the anthrax bacilli to a temperature of 108 for six days gradually diminishes their virulence without destroying their vitality. Exposure of cultures for three hours to sunlight, or the addition of carbolic

acid (1-600), sulphuric acid 2 per cent., or potassium bichromate (1.5000), also produces an attenuated form. Such germs, when inoculated into animals, either do not produce the disease at all or only a very mild attack. When these organisms, however, are injected into a young guinea pig, and from this to one several days old, or what is known as the repeated passage of attenuated varieties through susceptible animals, they will again acquire their usual virulence.

Pasteur has demonstrated that by inoculating the virus from the medulla of a dog dead from hydrophobia into a rabbit, the period of inoculation is usually from fifteen to twenty days, but by passing it repeatedly from rabbit to rabbit, the period of inoculation is gradually shortened until it reaches a period between six and seven days, at which time the strongest and most stable virus is produced.

He has also shown that by taking portions of the medulla from persons or animals dead from rabies and drying it over hydrated lime at a temperature of between 74 and 78, the virulence is diminished from day to day, so that after six days the virus produces symptoms only after a long period of inoculation; after twelve days drying, it produces only slight but not fatal symptoms, and after two weeks drying no symptoms are observed. These experiments formed the basis for his protective inoculation, the treatment being begun with the subcutaneous injection of emulsions of spinal cords or medullae that had almost lost their virulence, followed by emulsions from more toxic tissues until finally an injection of the fixed virus from the rabbit is used, after which the protection is assumed to be complete.

Portals of Entry.—Disease germs may enter the system through various channels, but always through the mucous membranes or skin. A solution of continuity is not always necessary, as shown by the fact that the organisms which cause furuncles, impetigo, sycosis and other skin affections may gain access to the sebaceous follicles. Perfectly healthy persons contract measles, scarlet fever, small-pox, chicken-pox, mumps, etc., and it would indeed be strange if all presented vulnerable spots. It is true, Wyssokowitch's experiments indicate that a number of disease germs cannot penetrate the respiratory or digestive tract unless there is a solution of continuity. On the other hand, Buchner has shown that the bacilli of anthrax can enter the pulmonary tissues through

the lymph spaces; and similar observations have been made with the bacillus of diphtheria in rabbits. A solution of continuity, however, vastly increases the chances of infection, as shown in erysipelas, tetanus, syphilis and surgical infections, and this is equally true of an abraded mucous surface. Indeed, it has been shown that sometimes a simple alteration of the epithelial cells is sufficient to favor the invasion of the germ.

The germs in small-pox, measles, scarlet fever, mumps, whooping cough, cerebro-spinal meningitis, tuberculosis, influenza, croupous pneumonia, are probably inhaled, and others may be taken up when located in the pharynx, as in diphtheria, septic tonsillitis, etc. The germs of cholera, typhoid fever, dysentery and other water-borne diseases most frequently enter through the digestive tract. This is also true, to a more limited extent, of the germs of tuberculosis conveyed in infected meat or milk. The mucous membranes of the genital tract are the most common channels for infection in gonorrhoea, syphilis, puerperal fever and, in rare instances, also of diphtheria and tuberculosis. In some instances infection may take place through the mucous membrane of the eye, as in purulent and gonorrhoeal ophthalmia, diphtheria and tuberculosis. Infection may be carried by the stings of insects, as in the inoculation of malaria, yellow fever and the *filaria sanguinis hominis* by mosquitoes.

We have seen that disease germs are widely distributed and the channels for invasion are also numerous, and the wonder is that more persons do not contract disease. This shows that invasion of the microbe alone is not sufficient to produce the disease, but that in addition to the germ, we must also have a suitable soil for its proliferation, and this we call predisposition. Time will not permit me to enter into a discussion of this important topic except to say, that certain diseases can only develop when the portals of entry are open for the invasion of the germs and the system, *i. e.*, the fluids and cells of the body offer suitable conditions for their growth and proliferation. A certain quantity of the germs is doubtless also a factor.

Clinical experience teaches that all infectious diseases require a period of incubation, which dates from the time of invasion of the germ until it has sufficiently developed to produce evidence of disease. This period varies in different diseases and individuals and depends largely upon the fact whether the microbial invader

proliferates at the point of invasion or must seek deeper or more remote parts of the body, also whether the germs have a rapid or slow growth, and lastly upon the condition of the blood and other defensive forces of the system. "It is during this stage that the blood and tissues are deeply engaged in the attempt to repel the attacks of the invading microbes." (Osler.)

In some diseases the germs evidently remain for a time at least at the point of invasion, proliferate and evolve toxins, which, being irritants, often cause inflammation, and this, as in erysipelas, malignant oedema, cholera and some forms of pneumonia, may go on without suppuration. Other bacterial forms cause the white blood cells to gather about the parts, and as they accumulate more and more the leucocytes die and we have inflammation with sup-puration, as in abscess, furuncles, impetigo and sycosis; other forms of bacteria cause inflammation with necrosis, as in diphtheria, gangrene, etc. Another class of germs proliferates at the point of invasion and subsequently invades the deeper tissues. This is probably true of tuberculosis. The germs of tetanus and rabies, whatever their nature maybe, appear to proliferate at the point of invasion, spread along the nerve trunks, and finally enter the blood. The germs of syphilis and of leprosy are probably at first localized, and finally invade other parts. In diphtheria, gonorrhea, puerperal and septic fevers, we see evidences how at times a purely local infection may be carried to other and remote parts of the body. An exact classification at this time appears, however, impossible.

Mixed Infection.—In this connection, reference should be made to the subject of mixed infection. By this we mean that two forms of disease germs may develop simultaneously in the same subject and produce pathogenic effects. This was first scientifically demonstrated by Brieger and Ehrlich in 1882, in two cases of typhoid fever, complicated with malignant oedema. Koch in 1884 also proved that the bacilli of anthrax and of tuberculosis and certain septic organisms and those of tuberculosis can develop simultaneously in the same body. Cases of mixed infection of typhoid fever and malaria have been reported by Kinyoun and others. Similar observations have been made in influenza and pneumonia, gonorrhoeal infections, and the streptococcus and staphylococcus infections, especially observed in the angina of diphtheria and scarlet fever. Again it has been observed that diphtheria may be engrafted

upon scarlatina as shown by the presence of the bacillus diphtheriae. In many of these infections it is believed that the primary infection simply paves the way for a secondary invasion or mixed infection, and while this is true of many complications and sequelae, there are also authentic instances of a true mixed infection, as shown by instances cited above and simultaneous development of small-pox and vaccine pustules in the same individual. This subject, it seems to me, offers a large and promising field for scientific work.

If it be true, that infectious diseases are produced by the invasion of bacteria, their subsequent development and the poisonous compounds evolved during their growth, the next question arises : *How and under what circumstances does the disease terminate ?* We know that under certain circumstances the accumulation of disease germs and their products may be so great in the capillaries as to destroy the vitality of the part by cutting off the blood supply. Now this may be a purely local condition, but let us figure to ourselves all the blood of the body charged with an organic poison, the capillaries obstructed with the microbial invaders, we can appreciate how either or both of these conditions may produce death. If death does not take place it is because at this critical moment something occurs which renders further proliferation of the germs and toxin production impossible and recovery ensues, provided alterations of the tissues do not prolong the disease. This involves, doubtless, many complex processes which are by no means thoroughly understood. Recovery is brought about, possibly, by different agencies in different diseases. In some the microorganisms may perish for want of suitable food ; in others they may die by the toxins of antagonistic species, or the very poison evolved by them may accumulate to such an extent as to prevent their own growth and they die self-poisoned. In still others a tolerance of the system may be established to the respective toxin, and it is believed that certain cell groups in the body after acquiring this tolerance effect a change in the chemical constitution of the toxins, and finally elaborate substances (the antitoxins) which antagonize the toxins and destroy their action altogether, thus aiding the leucocytes or warrior cells to overcome the invading microbes.

Since our knowledge of the nature of infectious diseases has been more and more defined, scientific methods for their prevention

have been applied. We have also learned from laboratory experiments that certain physical and chemical disinfecting agents are effective because they destroy the vitality of the germs. We also know that in most of the contagious diseases the infective matter is given off by the patient chiefly through the secretions and excretions, and it is evident that disinfection, to be of value, must be directed to these and all the media with which the patient has come in contact, and I therefore venture to enter a strong plea in behalf of proper isolation and scientific disinfection, and hope that this phase of the question will receive special consideration in the discussion.

The application of this knowledge has saved millions of lives, besides an incalculable amount of human suffering and distress, not to mention the economic aspect of the question. When we remember all this and the fact that Jenner's discovery at the close of the last century, of a fundamental and practical method of producing artificial immunity, has been far eclipsed in the last twenty years, and that we possess to-day not only curative but also protective sera for diphtheria, erysipelas, tetanus, plague, and possibly cholera, tuberculosis, typhoid fever, pneumonia, and a number of other immunizing agents for disease of man and lower animals, we have reason to expect great possibilities in our battle against preventable diseases.

The decrease in death rate from consumption in the United States since 1890 amounts to 54.9 per 100,000 of population; diphtheria and croup, 52.5; cholera infantum, 31.9; diarrhoeal diseases, 19; typhoid fever, 12.5; malarial fever, 10.4; whooping cough, 3.1; scarlet fever, 2.7. Indeed, the average age at death in 1890 in the United States was 31.1 years; in 1900 it was 35.2 years.

Sanitation and preventive medicine may justly claim a large share of credit, as the effects of improved methods of treatment, except in the case of diphtheria and croup, are not apparent. Indeed, the rates due to pneumonia, cancer, heart disease, apoplexy, diseases of the kidneys and septicaemia are higher than in 1890. We note with special regret the increase in the death rate from septicaemia, and may well pause to consider whether the present tendency of aseptic versus antiseptic methods is not to a great extent responsible for this increase.

Death rates due to certain diseases per 100,000 of population in the registration area in 1900 and 1890, and the increases or decreases in the rates. (U. S. Census, 1900.)

Causes.	Death rate.		Increase.	Decrease.
	1890.	1900.		
Consumption.....	245.4	190.5	...	54.9
Diphtheria	70.1	35.4	...	34.7
Croup.....	27.6	9.8	...	17.8
Cholera infantum.....	79.7	47.8	...	31.9
Diarrhoeal diseases.....	104.1	85.1	...	19
Typhoid fever.....	46.3	33.8	...	12.5
Malarial fever.....	19.2	8.8	...	10.4
Whooping cough.....	15.8	12.7	...	3.1
Scarlet fever.....	13.6	11.5	...	2.1
Septicaemia	7.7	10	2.3	...
Diabetes	5.5	9.4	3.9	...
Pneumonia	186.9	191.9	5	...
Cancer	47.9	60	12.1	...
Heart disease.....	121.8	134	12.2	...
Apoplexy.....	49	66.6	17.6	...
Influenza.....	6.2	23.9	17.7	...
Diseases of the kidneys.....	59.7	83.7	24	...

DISCUSSION.

Dr. Mayfield said that he would consider the subject from the standpoint of the general practitioner. The most notable of the recent advances in medicine had related to the vital causes of disease. We now looked upon certain diseases in which specific germs had not been demonstrated as belonging to the great class of preventable diseases, and believed that they should be treated as such. The mode of transmission was not always determined by the characteristics of the specific germ, for the manner in which many of them could be acquired was known long before there was any suspicion that they were of bacterial origin. It was a question whether pathological germs were not present in the air at all times, doing no harm, however, unless they encountered conditions and soil favorable to their growth and development. Under these circumstances an individual could acquire diphtheria, for instance, without having come in contact with one who had the disease.

Hereditary tendency was also an important factor in etiology. Long before germs were discovered persons spoke of "inherited disease." We now know that the disease itself is not inherited, but the predisposition to it is.

In considering the prevention of disease it was important to de-

termine whether germs are equally virulent at all times and under all conditions. Undoubtedly they are not. Some germs, like insects, are believed to be harmless under some conditions, but virulent under others. Typhoid fever, while known to be due to a specific germ, is believed by some to owe many of its serious symptoms to the development of virulent qualities in previously harmless bacteria, the normal inhabitants of the intestines. There are two ways of preventing germ diseases: 1. destroy the germs, and 2. keep the individual out of their way. Quarantine is valueless unless it is thorough, and to render it effective this must be well understood by those having the matter in charge. The public did not appreciate the virulence of bacteria, and the great danger of infection. This was especially true of the germ of tuberculosis.

Dr. Woodward said that the scientific study of such statistics as had been presented by Dr. Kober was, in many cases, rendered difficult, or even impossible, by reason of the fact that in the nomenclature of disease no distinction is made between terms descriptive of the underlying pathological process and terms which indicated the symptoms of that process. The result is that with advancing knowledge of the etiology of disease names assume new meanings. Unless such changes in the meanings are borne in mind, erroneous conclusions result. This difficulty appears most strongly when we consider the change in the meaning of the word "diphtheria" which has come about during the period covered by the table which was presented. Diphtheria meant in 1890 something very different from what it meant in 1900, and any attempt to compare the figures for the two years was practically useless. From recent developments, it seems as if we might be in the same predicament before long with reference to typhoid fever. We were discovering, apparently, that what we had called typhoid fever was not always due to the germ we had honored with its name, and were therefore threatened with "para-typhoid." While these changes were actually along the line of medical progress, they interfered seriously with the study of statistics.

He noted in Dr. Kober's paper an absence of all reference to two of the bugaboos of days gone by—sewer gas and accumulation of refuse. These we now recognize as mere indices more or less certain of the likelihood of the retention of infected matter, once it becomes located, and of the existence of such habits and modes of life as will lead to the dissemination of infected matter from one person to another. Susceptibility and immunity have been well discussed by Dr. Mayfield. Dr. Woodward was not satisfied with our knowledge upon these points. It seemed to him that more attention was being paid by bacteriologists to the study of the composition of artificial bacteria media than to the study of the conditions which favor the growth and development of bacteria within the body. These conditions demanded study and promised

much in the way of preventive medicine. They were of fundamental importance.

The etiology of nervous and mental diseases also presented a wide field for study. Dr. Woodward suggested that all diseases whatsoever, except such as depended upon congenital causes, were due to a failure of metabolism. In some cases an attack upon the tissue by pathogenic bacteria caused such a struggle for very existence as rendered the performance of the specific functions of the tissue either abnormal or impossible. In others the fact that the tissue was overworked caused either an accumulation of waste or a deficiency of nutriment within it, and led to the same result.

A study of the methods of quarantine now employed and of the modifications which might be advisable would form an interesting investigation for the Committee on Public Health. The subject of disinfection was a sealed book to the mass of the people, and it was the physician's duty to enlighten them. Many of the methods in common use were worthless. The principles of disinfection were simple, and when once understood would lead to intelligent action. The object was to kill the microbes in some way, and the principles were the same as those which applied to the killing of a dog or a cat, or any other creature; that is, that the organisms to be killed must be thoroughly exposed to some condition incompatible with life for a sufficient length of time to destroy their vitality. If these principles were adhered to any of the disinfectants in common use could be employed—heat, corrosive sublimate, carbolic acid, etc. If any one of such principles is disregarded, the process is uncertain. "Chloride of lime" should not be used as a disinfectant. The term has no definite meaning, and investigation by the Health Department had shown that the substances sold under that name contained but little available chlorine. The chlorinated lime of the United States Pharmacopoeia should be specified if an efficient article of this kind was desired.

Dr. J. E. Walsh spoke particularly in regard to the disinfection of rooms after diphtheria and scarlet fever. The subject was especially interesting to all who were engaged in conserving the health of the community. His experience had shown that the public had but a hazy notion of proper methods of disinfection; the methods in common use were certainly inadequate. He referred in this connection to the burning of a handful of sulphur or a sulphur candle, and the hanging around the room of cloths saturated with disinfectant solutions, the heating of turpentine or tar upon the stove, etc. All that was deemed necessary was the exclusion of fresh air, and the production of a horrible odor.

Disinfection was easy of accomplishment if proper methods were employed. Beside corrosive sublimate, only two disinfectants were worthy of consideration—sulphur and formaldehyde. Sulphur was efficient if the object to be disinfected was moistened;

otherwise it was worthless. It had the disadvantage of bleaching and destroying fabrics and leaving an unpleasant odor in the room for days. Formaldehyde was the best all-around disinfectant. There were three ways of using it : 1. the production of the gas from methyl alcohol in a suitable apparatus ; 2. boiling the commercial formaldehyde solution and liberating the gas into the room with or without pressure ; 3. the use of sheets saturated with the solution and hung in the infected room. The first of these had not been satisfactory in his hands ; the second was efficient, but more or less expensive, and it required considerable time ; the third he believed to be the best. Experiment and practice had proved that it was efficient. Formaldehyde and sulphur were suited only for surface disinfection and for clothing not thicker than one or two layers of blanket.

The method used by the Washington Health Department was the best that had been devised. It was as follows : After the recovery or removal of a scarlet fever or diphtheria patient employees of the Health Department take up and fold the carpet, and arrange the mattress, clothing and other articles so that the gas can circulate freely around them, and open bureau and closet doors. A sheet saturated with a solution of formaldehyde is hung over a line in the room, using about a pound to 1,000 cubic feet of air space. The room is then closed. Next morning it is aired, and suitable articles are taken to the municipal plant for further disinfection with the gas in a partial vacuum. Floors and woodwork are washed down with 1 to 1,000 bichloride. Books used by the patient should be destroyed ; others are exposed to the gas with the leaves spread open as much as possible. If the odor remains in the room beyond a reasonable time, a cloth saturated with ammonia water may be hung over a line to neutralize it.

In conclusion, Dr. Walsh suggested that the disinfection of premises after diphtheria, scarlet fever, etc., be left entirely to the health authorities. This could be done by merely sending in a recovery card.

Dr. McGuire commended the essay. He regretted, however, that more attention had not been given to the causation of diseases other than those of bacterial origin. The reason why dermatology was not studied and practiced more was because so little was known about the etiology of skin diseases. The causes mentioned in the books, such as climate, exposure, etc., did not go back far enough, they were not fundamental ; in 90 per cent. of skin diseases the specific cause still remained unknown. This was also true of diseases in general. What, for instance, was the essential cause of rheumatism, gout, and diabetes mellitus ?

The portion of the paper which dealt with sanitation was most important, as it indicated methods for the prevention of disease. This subject was more or less neglected by most medical schools. Some of the time spent in college could well be devoted to the

study of sanitation. The collegiate course was too long and the course in medicine too short. One or two years of the former should be added to the latter.

Dr. F. P. Morgan said that the subject chosen by the essayist was of fundamental importance because a knowledge of the causation of disease was necessary for the inauguration of effective measures to avoid or exterminate it. The manner in which preventable diseases are produced and disseminated should be made known to the public as far as possible. This was especially true of tuberculosis, and, happily, the people were beginning to appreciate its infectious nature. Considerable ignorance still existed, however, upon the subject, and, strange as it may seem, some intelligent persons, and even physicians, questioned its infectious character. For such the following history would prove especially interesting.

In the office building of a certain corporation in this city, before the building was enlarged, 60 to 70 young men were obliged to work crowded in a small room with a low ceiling and exceedingly imperfect ventilation. They worked at long desks, examining large record books, and going from one to another. It was the general custom to moisten the fingers in turning the leaves, and also to spit "at" the cuspidors, little attention being paid to neatness.

Four years ago No. 1 had pulmonary tuberculosis; worked as long as he could, and then left the office and died. Four other cases followed at intervals of about a year; No. 2, a boy 12 or 15 years old, died before No. 1. No. 3, my patient, an athlete of the Columbia Athletic Club, contracted the disease in March and died the following October. Nos. 4 and 5 are now (December, 1900,) in Colorado for the disease.

The rapid succession of these cases caused considerable consternation among the employees in the room, and a quiet investigation was instituted in which it was ascertained beyond reasonable doubt that there had not been a case of consumption among the occupants of the room since the office was organized, fifteen years before, until No. 1 was taken sick. Shortly afterward the building was enlarged, but not until several employees had given up their positions for fear of contracting the disease.

Dr. Hooe said that the homes of the poor particularly needed thorough disinfection after cases of infectious disease. The physicians to the poor could do great good by giving attention to this detail. He had used for the purpose sheets saturated with formaldehyde solution and hung up in the sick room, and had found the method very efficacious. The people should be taught how to avoid the preventable diseases, particularly tuberculosis. Nurses could do much good in this direction. He commended the use of sputum cups and similar preventive measures.

Dr. Mary A. Parsons said that anything which tended to lower the tone of the blood and nerves predisposed the individual to

germ infection, and there could be no reasonable doubt that the habitual use of alcohol or tobacco tended in this direction. She presented statistics which showed that the consumption of these two substances has of late increased, and also the number of cases of certain chronic diseases the origin of which is ascribed by many to habitual indulgence in alcohol and tobacco. From these facts she drew the conclusion that the habitual use of these substances was an important factor in the causation of certain diseases, and, inasmuch as they had a baneful effect upon the system, their use should be more carefully regulated.

Dr. A. F. A. King said that the etiological relationship between bacteria and disease was of interest in connection with its bearing upon the struggle for existence. We live in a civilized portion of the globe, and, therefore, no longer have to struggle for existence with large animals, such as lions, tigers, etc., nor to any extent with smaller ones, like snakes and rats; but as we go down the scale we find the struggle between man and the insects, like mosquitoes, hornets, etc., still going on, these little creatures causing annually many deaths. But it is with still smaller organisms—microbes—with which the struggle for existence is most fierce, and, fortunately, nature has given us an instrument, the microscope, with which to discover them.

The study of modified or depraved function was of the greatest importance. The disregard of even the least of nature's laws inevitably resulted in injury to the individual. Even such acts as eating, writing, etc., if indulged in to excess gave rise to disease, and in studying the causation of disease we should not forget to consider departure from normal functions as a possible factor in the production of maladies from which we suffer. For instance the teeth fail us in many instances at a comparatively early time of life. Why? Because we no longer eat bones, the phosphatic envelopes of grain, and the coarser portions of food which were eaten by our ancestors, and which served to furnish material for the building up of the teeth; the phosphatic envelopes of grain are removed by the process of grinding in mills, and are therefore absent from the flour which is used for food. Our ancestors had no such process, and their teeth were much superior to ours. Hence, in addition to bacteria as a cause of disease we have also to consider the etiological importance of departure from normal function. It was an important element in predisposition to disease, and deserved careful study.

Dr. William Ward commended the essay, but thought that Dr. Kober had not given enough credit to the early leaders of the profession who believed in what they termed "living contagion." These men predicted the existence of germs, but were not given credit later by the scientists who actually discovered them. This was not the custom in any other branch of science; on the contrary, the man who announced his belief in a given theory is al-

lowed to make use of observations and discoveries which tend to substantiate his contention, and if the theory becomes an accepted fact, he is given all credit therefor.

Not enough attention was paid to depraved conditions of the system as a cause of disease. He cited the case of a girl who came here from a limestone country, and who suffered from the absence of calcium salts from her diet. She recovered her health when the deficiency was made up by supplying them in the form of medicine. He termed her malady "deficient condimental alimentation."

Dr. W. W. Johnston said that recent discoveries in bacteriology had completely revolutionized our ideas concerning the etiology of certain diseases. Many which were formerly ascribed to climate, exposure, etc., are now known to be of bacterial origin. Pneumonia is an example. Dysentery, formerly thought to be a simple catarrh, with involvement of the deeper tissues of the intestine, due to exposure to cold, constipation, etc., we now know has a bacterial cause. Acute rheumatism has recently been placed in the same category, although the specific germ has not as yet been demonstrated. Reasoning from analogy, we are led to believe that other diseases also are caused by bacteria, although the micro-organisms themselves have not yet been identified. He could not agree with Dr. McGuire as to the limitations of our knowledge of the causation of disease. There was a vast and ever-increasing fund of knowledge upon this subject. It behooved one to hesitate before saying that any disease is not of bacteriological origin. He regretted that Dr. McGuire had not said more about the bacteriology of skin diseases; many of them were undoubtedly of this nature.

Dr. Kober's essay was instructive as it directed attention to the causation of disease, particularly as regards means of infection, its baneful results, and the best methods of prevention. One could now be sure that every fever was the result of infection. In conclusion, Dr. Johnston spoke confidently of our present knowledge upon these subjects, and that which we would acquire from future discoveries.

Dr. McGuire explained that he agreed with every word that Dr. Johnston had said. He had intended to say that we knew very little about the causation of the diseases which were not of bacterial origin. He had not discussed the subject of the bacteriology of skin diseases because it was vast, and he did not wish to take up the time of the Society.

Dr. Kober, in closing, thanked the members who had participated in the discussion. He was glad that Dr. McGuire had modified his statement. He had referred but briefly to mechanical and chemical causes of disease on account of lack of time and space. A knowledge of the causation of disease was necessary for its prevention, and the application of this knowledge would

enable us to eradicate the preventable diseases. This would be the most brilliant achievement of the century. He was glad that Dr. Parsons had brought out the valuable point concerning the evil effects of alcohol. He himself had referred to this point in his address before the American Medical Association.

CASE OF PNEUMONIA WITH RIGHT SIDE ENDOCARDITIS.*

By D. S. LAMB, A. M., M. D.,

Washington, D. C.

A colored man, age 25, died at the Freedmen's Hospital, Washington, the day of his admission. The history given was that he had had chills, followed by fever, headache and pains in limbs, and afterward sweating, cough and abdominal tenderness. While in hospital his temperature ranged from 99 to 102, pulse 118 to 124, respiration frequent, skin pale, expansion of thorax fair, vocal fremitus distinct, vocal resonance over entire thorax, epigastric tenderness, bronchial râles both sides, more marked on right, pain in right side of thorax, cough, urine 1015 and somewhat albuminous. The necroscopy showed a double bronchopneumonia, more marked on the right side, and large vegetations on the tricuspid valve.

Dr. J. B. Nichols said that the specimen was interesting on account of the large size of the vegetations, and also because they were found on the right side of the heart. The diagnosis was made without difficulty, as the symptoms were very definite. The disease was important mechanically on account of the danger of embolism. The endocardium also was liable at any time to become infected and to give rise to a general septicaemia; in such a case the only abnormality found at the autopsy might be the vegetations upon the valves. He had recently had such a case. The valves of the heart were especially susceptible to these growths and also to infection. This was due in some measure to their exposed position in the blood stream, and the strain to which they were subjected.

Dr. Lamb said that one might infer from this that the diagnosis of endocarditis in these cases was easily made, but this had not been his experience.

* Reported with specimen to the Medical Society of the District of Columbia, Feb. 5, 1902.

FIRST AMERICAN CASE OF INFECTION WITH
LAMBLIA DUODENALIS. *

By C. W. STILES, M. D.,

Bureau of Animal Industry, Washington, D. C.

Dr. Stiles exhibited a guinea pig which he had infected with *Lambliu duodenalis* from the first case of the presence of this parasite in man which has as yet been diagnosed in the United States. The original material came from a child in Baltimore, in the practice of Dr. Hemmeter, and the encysted specimens were fed to animals in order to raise the free stage, and thus make positive the diagnosis.

This parasite is a protozoan belonging to the Flagellata. It occurs in man, rats, mice, dogs, cats, sheep, rabbits and guinea pigs, and has been found heretofore more particularly in Germany and Italy. He thought it was probably a more or less common parasite in the United States, but had simply been overlooked heretofore, because physicians are not in the habit of making microscopic examinations of feces. He drew attention further to other flagellates which occur in the human body, and described the anatomical differences noted in the various forms.

Dr. J. B. Nichols asked whether the parasite caused the intestinal lesions or merely accompanied them.

Dr. Bovée asked as to the manner of infection in the case reported by Dr. Stiles. The child was a little over three years old, and was said to have had the disease three years; it could not, therefore, have been infected from eating bread, as was suggested.

Dr. J. P. Miller asked whether the parasite could proliferate in bread. He also asked for the clinical history of the case.

Dr. Stiles, in answer to these questions, said that opinions differed as to the pathogenicity of intestinal flagellates. His own position was that, while a few hundred thousand might not do appreciable injury, he would not like to maintain that very heavy infections were absolutely harmless. The claim of some authors that flagellate parasites were able to prevent a pre-existing diseased condition from healing was not without support from a clinical standpoint. While the parasites would not increase on bread, contaminated water should be taken into consideration as a possible source of infection with the encysted stage.

* Reported, with specimen, to the Medical Society of the District of Columbia, February 5, 1902.

CASE OF GENERAL TUBERCULOSIS WITH
CEREBELLAR TUMOR.*

By G. N. ACKER, A. M., M. D.,

Washington, D. C.

E. H., age 19 months, male, colored, entered the Children's Hospital, Washington, November 20, 1901. Family history unknown. The child was breast fed up to the date of admission, but had never been healthy; frequently vomited its food and was subject to recurrent gastro-intestinal disorders. Had fever, highest at night, and with slight cough. It had never thrived and had lost much flesh during the previous two months. Was much emaciated; rachitic condition marked; cervical glands enlarged; apathetic. The respirations were rapid and shallow. Mucous rales throughout both lungs. Impaired percussion note over left base posteriorly. Broncho-vesicular breathing left side. Percussion note dull over right lung posteriorly, with numerous liquid rales at apex and loud, harsh breathing at base. The infant gradually grew weaker and the breathing became worse, with marked bronchial respiration in left lung. Died December 22.

The temperature was 100 on admission and fell next day to 97.6; rose to 101 December 2; fell to 97.4 December 5; rose gradually to 102.8 December 12; vacillated for a week between 98.8 and 103.6; the remaining time was 99.8 to 102. Pulse 100 to 160. Respiration 24 to 72.

The necropsy showed the following lesions: Serous exudate over cerebral parietes and vessels much engorged; general sero-fibrinous exudate at base with much engorgement of vessels, along the course of which were tubercular deposits; miliary tubercles in 4th ventricle; abundant miliary tubercles between cerebellar hemispheres, and on under side of left hemisphere was a tubercular tumor 1-2 by 2-5 inch in size, in which the tubercle bacillus was found; right lung everywhere adherent by tubercular pleurisy, studded with tubercles, especially in upper lobe; abscess cavity large as a hazelnut in apex, and many cavities size of a pea elsewhere; left lung showed pneumonic area at apex, with occasional tubercles the size of a bird shot to a bean, and some cavi-

*Reported with specimen to the Medical Society of the District of Columbia, January, 29, 1902.

ties ; two cavities size of a large hickory nut in lower lobe ; tracheo-bronchial glands tubercular. The tubercle bacillus was found in both the lung and bronchial glands. Apex of heart adherent ; stomach congested ; many small, irregular excavating and undermining tubercular ulcers of Peyer's patches, and some similar ulcers in large intestine. The tubercle bacillus was found in the ulcers. Mesenteric glands enlarged ; liver congested ; spleen enlarged and studded with miliary tubercles ; kidneys seemed tough.

Dr. Glazebrook said that he had at times been disappointed because there was no discussion upon specimens which he had presented before the Society. Others had had the same experience. He thought that the method adopted by the President—inviting a member to open the discussion—was a good one ; it stimulated discussion and tended to do away with the feeling above mentioned. He expressed his thanks for the invitation extended to him in connection with Dr. Acker's specimen.

The specimen was interesting in several ways. First, the symptoms of tuberculosis were manifested very early in life. General tuberculosis was uncommon before the third year of life. In several hundred autopsies he had seen but three instances of fetal tuberculosis—general miliary tuberculosis. Second, the extent of the lesion was unusual. Under the circumstances, it was remarkable that the child lived as long as it did. Third, the disease was no doubt the result of direct intrauterine infection. It would be interesting to know whether the meninges were also affected.

Dr. Woodward said that, in his judgment, the facts here would hardly warrant a diagnosis of inherited tuberculosis. The child might have become infected from a tuberculous mother at any time during the nineteen months of its life.

THE "BUCHHOLD" ANATOMICAL AND PATHOLOGICAL SPECIMENS.*

By D. S. LAMB, A. M., M. D.,

Washington, D. C.

The method of preparation is patented in Germany. Preparations of the kind were first exhibited in 1899, at the meeting of naturalists and physicians at München. They show the natural color of the object, are very easily handled and used for demon-

* Exhibited before the Medical Society of the District of Columbia, February 5, 1902.

stration, and some can be used with the lantern. They are mounted by the method of Prof. Dr. Möller-Morin. The sizes vary. Price of the more common objects, 9 to 25 marks; the rarer forms, 25 to 300 marks. Many of the specimens were also shown at the Congress of Internal Medicine, April 15 to 19, 1901. They are sold by Pippow Brothers, Hermsdorf (Mark) Bahnhof Str. II, Berlin, N.

The peculiarity of the method seems to be that the specimen is first preserved in some fluid, the character of which is not stated. It may be the Kaiserling process. The specimen is laid on a flat plate of clear glass and covered with a convex plate. The plates are cemented together at their edges, the preserving fluid having of course been previously introduced. The mounting is simple—a pasteboard or thin wooden framework pasted over with black stippled paper. The preparation needs to be carefully handled.

Dr. Glazebrook said that the specimens were very similar to some he had seen in Brooklyn in 1890-'91. They were prepared in almost exactly the same way, but the convex glass used in Dr. Lamb's specimens was an improvement. They were glycerine preparations, with 3 to 5 per cent. alcohol to preserve them.

CASE OF TUBO-OVARIAN CYST.*

By J. W. BOVÉE, M. D.,

Washington, D. C.

A white woman, age 31, who had had two children and several abortions, gave a history of former pelvic peritonitis and also of a mild attack beginning one week before I saw her. On examination I found a mass in the peritoneal cavity at either side of the uterus. After the acute symptoms had subsided I did an abdominal section, and removed a left tubo-ovarian cyst, intact, and containing about six ounces of clear fluid. On the right side was a badly adherent and degenerated appendage and an adherent and inflamed vermiform appendix.

Tubo-ovarian cysts are probably found by the abdominal sur-

*Reported with specimen to the Medical Society of the District of Columbia, February 5, 1902.

geon not oftener than in $\frac{1}{2}$ per cent. of operations. Their etiology is probably clearer than is that of the ovarian cyst or hydrosalpinx, the latter being supposed by some to follow pyosalpinx, while many specimens have resisted all efforts to establish this sequence. One might well expect the tubo-ovarian cyst to result usually from a tubo-ovarian abscess, and rarely from an ovarian abscess communicating with the fallopian tube, an ovarian cyst connecting with the fallopian tube, a hydrosalpinx or pyosalpinx burrowing into an ovary, or any combination of these fluid conditions of the tube and ovary. It is certain that tubo-ovarian cysts always have in their vicinity evidences of inflammatory changes.

In Memoriam.

DOCTOR ARMISTEAD PETER.

WHEREAS, the Almighty in His infinite wisdom has taken from our midst our late colleague and associate DR. ARMISTEAD PETER, who died suddenly at his residence in Georgetown, D. C., January 28, 1902, and

WHEREAS, In our frequent intercourse with him we have learned to prize his sterling integrity and high nobility of character, and do hereby desire to place on record the great loss to the Medical Society of an accomplished physician and valued member ;

Therefore, The Medical Society of the District of Columbia now mourns one of its oldest and most honored members ; an able, skilful and progressive physician ; a modest, upright and valued citizen.

His faithfulness to duty, his gentleness, his high sense of honor and rare consideration for others, and the excellence in the performance of his many responsible duties in a long and busy professional life of nearly forty years, should be examples worthy of emulation by us, his survivors.

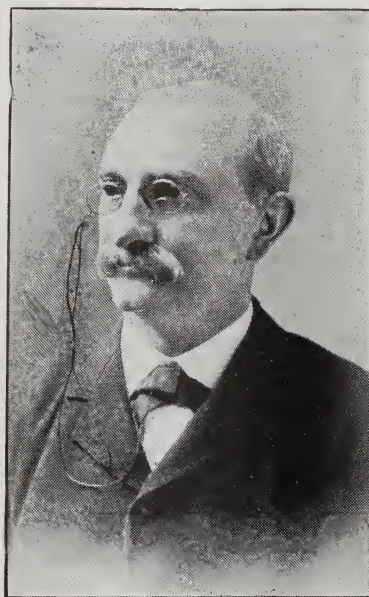
*Therefore Resolved,** That we tender to his household and kinship our heartfelt and sincere sympathy for the loss of one taken from them in the fullest tide of manhood and usefulness, and that

*Preamble and resolution reported by the Memorial Committee and adopted by the Medical Society of the District of Columbia, February 18, 1902.

a copy of this preamble and resolution be transmitted to his family.

LOUIS MACKALL,
C. H. A. KLEINSCHMIDT,
JOS. TABER JOHNSON,
J. H. YARNALL,
A. A. SNYDER,

Committee.



Dr. Louis Mackall said : The ancestors of Dr. Armistead Peter were distinguished for their wealth and high social standing before the seat of Government was moved to Washington ; were large real-estate owners in that part of the city known as Georgetown before its incorporation as a town ; were intimately associated with the Washingtons and Lees of Mount Vernon and Arlington, who at that time were considered near neighbors of the citizens of Georgetown. He was the son of Major George Peter, who entered the U. S. Army in 1799, and was a Member of Congress from Maryland for several years.

Dr. Peter was born in Montgomery County, Maryland, February 23, 1840. In the early years of his life he was instructed by a private tutor, and afterward finished his education in the celebrated classical academy of the Rev. Dr. Carnahan, afterward

President of Princeton College. He studied medicine in the office of the late Dr. Joshua Riley, attended lectures in the Medical Department of the Columbian University, from which he graduated February 21, 1861, locating in Georgetown as a general practitioner, and continued in active practice there to the day of his death.

When we take into consideration the difficulties with which he had to labor, his success was remarkable. From infancy he had to contend with a defect of speech and hearing, which his friends thought, and which would in any one else not endowed with remarkable determination and perseverance have debarred him from undertaking the medical profession. But this defect was compensated for by the possession of several other attributes. First, his remarkable tact; indeed I may say that I never knew any one who enjoyed this trait to a higher degree; it never failed him, often enabling him to turn defeat into victory. Another attribute was his great suavity of manner, which made him very popular. Then again he was at all times and in all places the thorough gentleman—this attribute was stamped all over him and was innate in him. He was endowed with a very retentive memory and the happy faculty of recalling cases once seen, and applying the treatment found successful in these cases to others belonging to the same class.

Dr. Peter acquired a large practice and had a high reputation as a distinguished physician not only at home but also at a distance, and was often called in consultation by physicians outside the city. He was generous and kindhearted, and leaves many friends and patients to mourn his loss; these are not confined to any particular walk in life. Even to the last his services were freely and gratuitously given to the poor and lowly. He was free from extravagant habits, and acquired considerable property, so that his wisdom in selecting his profession was proven by his success. Only a few, with all the advantages of a perfect organization, have surpassed him in this respect.

During the war between the States he was employed by the United States, first as a ward surgeon in the Seminary Hospital, Georgetown, and afterward was ordered to open another hospital and placed in charge, but, at his own request, was ordered to his former position. For many years he was a member of the Georgetown Board of Health, and was also physician to the small-pox hospital for the year 1866.

A few years after his graduation in medicine he married Miss Martha C. Kennon, daughter of Commodore Beverly Kennon. She died many years before the doctor, leaving four sons and one daughter.

Dr. Peter enjoyed excellent health through life until a year ago, when he had his first attack of angina pectoris, which lasted only an hour or two and did not prevent him from going on with

his work as usual. Two or three days prior to his death, whilst visiting a patient, he had a second attack, which did not entirely pass off, but his suffering was not sufficient to prevent him attending his patients, which he continued to do to within an hour or two of his death.

Between 12 and 1 o'clock of January 28, he had a recurrence of severe pain and numbness down his left arm and over the region of the heart. These symptoms increasing, Dr. Mackall was sent for and found him in his office. His pulse was normal and his appearance indicated nothing alarming. He had in his hand a hypodermic syringe which he gave to me, stating that it contained a solution of $\frac{1}{4}$ grain of morphia, and that he had great repugnance to using it, and asked that I should not inject all of its contents. His request was complied with without, however, relieving the pain, and he was prevailed upon to have the remaining portion administered. This also failed, and the pain becoming still more severe, I administered the 1-100 grain of nit. glycerine hypodermically, and probably in less than three minutes he straightened up, threw back his head, a slight convulsion followed, and death closed the scene. To those of us standing by the suddenness of his taking off was appalling, and I could but realize how truly it has been said—

'Tis but the wink of an eye, 'tis but the draught of a breath,
From the blossom of health to the paleness of death,
From the sweetness of home to the bier and the shroud;
O, why should the spirit of mortal be proud?

It is hard, Mr. President, to part from old and well-trying friends, and sad to think that the friendship of forty years, with many pleasant associations, is gone to return no more, and that all that remains is to say in sadness and sorrow, Farewell, farewell, O, my friend. We trust that you have safely crossed to the farther shore of the dark river, and found that the life here was but only the troubled dream—the life there the reality and the realization of perfect bliss.

Dr. Jos. Taber Johnson said: I am very glad to second the resolutions in regard to our lamented and recently departed friend and professional brother, Dr. Peter. They are none too strong. I most heartily subscribe to every word and sentiment they express. It was not my good fortune to have known Dr. Peter as well, socially, as those members of the Society did who resided in West Washington, and were therefore his more intimate friends and neighbors, but I have often experienced both the pleasure and profit of meeting him professionally, and I am consequently in a position to testify, which I do most willingly and heartily, to his unusual ability as a physician as well as to his uniform punctiliousness and courtesy and kindness as a consultant.

Having been associated with him in many special surgical cases,

I am able from considerable experience to speak of the prompt and thorough manner in which he upheld the hands of the operator, and counseled his very devoted patients to do just as he told them in every particular. His courtesy and kindness, his constant regard for the feelings of others, his devotion to the interests of his patients, his unselfishness, his constant regard for the ethics of our profession, his interest in the success of the younger physicians, were all qualities which attract our attention, compel our admiration, and might with benefit excite our emulation. It is doubtful if one of us who are left behind can say of him that we ever knew of him taking an unfair advantage of any one, and least of all of a professional brother. He seemed to be the very soul of honor and professional integrity. The spirit of commercialism, so rife throughout the land to-day, never influenced him; his unsullied reputation was never tarnished by a mean or sordid act, and we are met here to-night to pass resolutions and express our sorrow over the sudden and untimely passing away of so perfect a gentleman, so educated and accomplished a physician, so kind a father and so patriotic a citizen as it is our good fortune to have enrolled in the membership of our Society.

Dr. Peter was so fortunate as to inherit from his own immediate ancestors, as well as to acquire by the still more tender ties of matrimony, the qualities of chivalry and patriotism to a remarkable degree. Growing up in early life, and later on with wife and children, amidst the traditions and memories of Tudor Place in Georgetown, which had entertained, in the early days of our Republic, Washington, the Custises, the Lees and others noted for their chivalry, their gentlemanly and patriotic qualities, it came as a second nature to Dr. Peter to possess himself, in a marked degree, these very admirable characteristics. These facts make his departure from us more deplorable and add an unusual sadness to an event *never* free from these elements of grief and sorrow.

We are not so rich in the qualities which we so much venerate in the character of our departed friend as to permit an occasion of this kind to go by without recording our admiration and deploring our loss.

There is much to be thankful for in his life; there is much to regret in his death; there is much that we may profitably emulate in his character and example. While *men* may die, the *good* they do lives after them. May all the good in his life and character be not only a guide and an example to each one of us, but a stimulus and an inspiration to each one of our successors in this Society.

Dr. Kleinschmidt said that it would be superfluous to add more to what had already been said. Nothing but the truth had been spoken of Dr. Peter. They had been associated as students and later as intimate friends. He had always found Dr. Peter a

perfect gentleman, straightforward and honest in all his dealings. He was a skilful consultant in spite of defects of speech and hearing. He was a persistent, painstaking and close diagnostician ; it seemed as though his sense of touch was developed at the expense of hearing. He was especially skilful in the diagnosis of pneumonia, and he had never known him to fail in the recognition of this affection.

As a consultant he was quiet, generous, and did all in his power to aid his brother practitioner. He was ready at all times to treat the poor gratuitously, and his death was a great loss to the many families to whom he had endeared himself, as well as to the profession at large, who had always found him to be a true friend, a fine counselor and a straightforward gentleman.

Dr. J. H. Yarnall said : I do not believe that I am able to say anything that can add to the high character and professional ability of our late colleague after all that has been so kindly and affectionately placed on record. Still I do not feel that I should or ought to let this only opportunity pass without paying my small tribute of respect, that of a friend to an old and kind friend, though it be ever so imperfectly said ; and yet in this perfunctory and formal way one can rarely say just what he would wish, and certainly not what he really feels.

My acquaintance with Dr. Peter extends back to the time I was a young boy, but it was not until after I had graduated and begun the practice of medicine that my acquaintance with him ripened into friendship. It is from just this point in my life, and the beginning of a more intimate acquaintance with him, that I would point out one of his most estimable and appreciated qualities, and that was the genuine and warm interest he always showed in us men of a younger generation, who were just entering into a new field of life and labor and beginning a long struggle to terminate in failure or success. He always aided us by words of encouragement and hope, and often, in a more material manner, by directing patients to our offices, and, what was still better, always spoke kindly words of commendation to others of our abilities and qualifications. He was always willing to give us the benefit of his advice and professional assistance at any and all times, and did it with such courtesy and cheerfulness that it would stifle much of the regret that would be felt for calling upon him at unseasonable times and hours. He was the soul of honor and truth, and was always ready to smooth and tone down those little asperities which sometimes arise in the busy competition of professional life by a kindly and broad charity for all.

He was a modest, diffident man among strangers, but he had no lack of confidence in his own abilities, and at all times and in all emergencies was ready to act promptly and intelligently. He was a most conscientious, faithful and tireless worker in his daily professional labors, for I remember about 1890, when he went to

Europe, he told me it was the first vacation he had taken in twenty-five years. As a companion he was genial and entertaining; as a host, hospitable and courteous, and as a friend, always generous and true. This small tribute to Dr. Peter comes from an acquaintanceship of over twenty years, and only in an imperfect way presents the sterling qualities of our deceased associate.

The Clinical Society of Washington.

THE RESPIRATORY PHENOMENA OF INFLUENZA.*

By J. S. WALL, M. D.,

Washington, D. C.

Considering the prolific literature concerning diseases far less common than influenza, the dearth of discussions upon the respiratory complications of this disease, especially in view of their influence on morbidity and mortality, is enough to excite comment.

Of the influence of gripe in increasing the death rate from pneumonia, as recorded by Boards of Health, there can be no doubt. Thus, statistics from New York in 1890, showed that for nine years previous to this date the average number of deaths from pneumonia during the month of January was 394. The deaths from this cause during January, 1890, during a severe epidemic of influenza, were 1,111. The relationship of the two diseases has been equally well marked during each succeeding year from the time of those observations.

Epidemics of varying intensity have raged since 1510; epidemics now occur yearly in this country, usually beginning in the autumn, and lasting throughout the winter. January, February and March might be called the "influenza trimester" with almost the same propriety with which the term "typhoid months" is applied to August, September and October.

Three forms of the disease are usually recognized: the respiratory, the gastro-intestinal, and the nervous.

*Read before the Clinical Society, February 10, 1902.

The Clinical Society was organized as "The Society of Physicians and Surgeons" of the District of Columbia, February 20, 1893, and reorganized as "The Clinical Society of the District of Columbia," December 9, 1895.

The *Presidents* have been Drs. George Barrie, Duff G. Lewis, W. L. Robins, W. M. Barton, F. P. Vale, E. L. Allen, J. B. Nichols, C. C. Marbury, W. A. Wells. The *Secretaries*, Drs. W. L. Robins, E. E. Morse, R. H. Von Ezdorf, H. C. Duffey, L. A. Johnson, F. P. Vale, E. B. Behrend, J. C. DeVries.

The present officers are: *President*, Dr. W. A. Wells; *Vice-President*, Dr. M. Griffith; *Secretary*, Dr. J. C. DeVries; *Treasurer*, Dr. J. C. DeVries; *Board of Censors*, Dr. C. C. Marbury, Dr. W. M. Barton, Dr. Jesse Ramsburgh.

In the majority of cases influenza is accompanied by more or less catarrh of the mucous membrane of the respiratory tract; rhinitis, laryngitis, bronchitis and, finally, pneumonia complete the train of lesions following the progressive march of influenzal infection. Autopsies reveal extensive lesions in the mucosa of the upper-air passages and bronchial tubes. Macroscopically, the lungs on section present several pictures. The whole lobe may be consolidated in a state of red hepatization, no crepitation, excised portions sinking in water. The section may show the lung infiltrated with a thick, cloudy, reddish-gray fluid, presenting numerous disseminated resistant areas of variable size, which are often sharply defined, limited by the margin of the lobe. Excised portions of these areas placed in water may sink or float. The process seems to be one of splenization rather than hepatization, so much so that the term spleno-pneumonia has been applied to such conditions found in influenzal patients. The foci of consolidation are mostly multiple, and scattered diffusely throughout the posterior portions of the lungs, but are frequently fused together or confluent, resembling a lobar pneumonia. The pleura is almost constantly involved.

The anatomical findings in conjunction with the physical signs, would warrant a division of influenzal pneumonias into several groups or classes, which should not, however, be arbitrary divisions, as we so often meet with; "integers," to adopt a recent term. *First*, the *lobar* form, with the *diplococcus pneumoniae*, in which infection with this organism follows most probably secondarily the devastation of that of influenza, which has presented to the ubiquitous pneumococcus a nidus for its development. *Second*, a broncho—or lobular pneumonia—twice as frequent as the first form—may be further subdivided into discrete, confluent and migratory.

The onset may be abrupt, usually it is insidious, following some slight exposure, particularly getting up from bed too soon or resuming prematurely one's occupation. Rise of temperature commonly indicates beginning of pulmonary complications, the fever accompanying which is, as a rule, *low*, average 101. Most critical cases may have even a normal temperature. Cough and dyspnoea appear. The sputum, at first scanty, soon becomes purulent. The physical signs are often obscure, usually posteriorly near the scapular angle, fine and large moist rales, crepitating apparently close

to the ear. These rales are more or less stationary ; *i. e.*, coughing, while it may alter their character or develop their presence more strongly, does not cause any appreciable change in their *position*. Bronchial breathing may appear with persistence of rales, and is more perfectly developed in the lobar form. Dulness is present, usually in isolated spots over the back of the chest. Resolution is slow. The *diagnosis* is largely a personal matter. Some hesitate to class as pneumonias cases presenting these obscure physical signs. Massive consolidations are more readily diagnosed. The prognosis is grave. The treatment, prophylactic and sustaining.

Dr. H. B. Deale, in discussing the paper, cited numerous cases showing the malignancy and contagiousness of the infection. It was also discussed by Drs. B. L. Hardin, Barton, L. A. Johnson, Stuart, E. B. Behrend, Ramsburgh and Hurtt.

Society of Ophthalmologists and Otologists, Washington, D. C.*

WOOD-ALCOHOL POISONING.

Dr. S. M. Burnett reported a case contracted by drinking Jamaica ginger. The subject was a dipsomaniac who, after a prolonged spree in August last, drank two bottles (3 oz.) of Jamaica ginger. Forty-eight hours later he noticed a decided dimness of vision, so much that he was unable to read, though able to go about unattended. After a time this condition improved, but everything appeared as if veiled in a gray mist. In January, 1902, he went on another spree, and this time drank one bottle of Jamaica ginger, which had the effect of still further damaging vision. About one month after this he came under the care of Dr. Burnett, who, noticing the peculiar atrophy of the disk, elicited the foregoing history. At this time vision was 5-15 in the right, and 5-35 in the left eye. The visual fields were normal for white ; but there was a central scotoma of about 10° of total color blindness, outside of which blue could be discriminated though red and green could not ; in the right eye there was

* Meeting of March 21, 1902 ; reported by the Secretary.

The Society was organized April 13, 1893. Officers for 1902 : *President*, Dr. Chas. W. Richardson ; *Vice-President*, Dr. Wm. H. Fox ; *Secretary*, Dr. W. N. Suter.

a similar scotoma for red and green, but not for blue. Dr. Burnett referred to the striking fact that several other persons who had participated in debauchery with his patient had drunk three or four bottles of the same brand of Jamaica ginger without apparent detriment to health.

SOME REMARKS ON THE TREATMENT OF GLAUCOMA.

Dr. O. A. M. McKimmie read the paper. Referring to medicinal remedies, he said these were directed toward depletion of the over-distended eyeball, either by direct local action or indirectly through their constitutional effects, the latter remedies being used to assist the drugs of local action. Of the first class of remedies, he said eserine and pilocarpine were the chief, the former being the one mainly relied upon. He thought weak solutions of this drug should be preferred, from $\frac{1}{8}$ gr. to $\frac{1}{2}$ gr. to the ounce, as the strong solutions were irritative, and, by producing congestion, might actually promote increase of tension. Of indirect depletives, he advocated purging, diaphoresis, leeching, &c. In glaucoma secondary to posterior synechia atropine should be used to break up the adhesions, if possible. As to surgical treatment, Dr. McKimmie said that iridectomy was the preferable operation in the majority of cases, sclerotomy being reserved for those cases in which iridectomy had failed, or was contra-indicated because of hemorrhagic tendency or other reason. He thought excision of the superior sympathetic ganglion also had its indications, but, because of its difficulties and uncertainties, its sphere was more limited.

In discussing this paper, **Dr. Belt** reported a case of simple glaucoma which had been held in check for eight years by the use of eserine, but iridectomy had to be done subsequently, the result being a retardation, but not cessation of the process. **Dr. Butler** spoke of the value of constitutional remedies, depletive and alterative. He thought more reliance was to be placed on these remedies than on iridectomy in simple glaucoma, since he believed the disease not local, but a disturbance of nutrition of the eyeball. **Dr. Burnett** spoke of the difficulties of performing iridectomy in glaucoma, and advocated making the entire incision from without inward. When nearly complete a small puncture should be made and the incision completed with a probe-pointed knife or scissors.

PAIN ABOUT THE EYE AND EAR FROM NASAL DISEASE.

Dr. E. O. Belt read the paper. He reported two cases of this kind. The first was that of a blacksmith who had suffered for a number of months with intense pain over the brow. He was sent to Dr. Belt after other resources had failed, including the correction of a slight hyperopia. The right inferior turbinate was enlarged, and there was a spur on the left side of the septum. The turbinate was reduced by chromic acid and the spur was removed. Immediate and permanent relief followed removal of the nasal obstruction. The second case was that of a young woman who had severe pain over the left eye. Correction of her myopia failed, but removal of a large septal spur afforded complete relief.

In the discussion, **Dr. Wells** mentioned a case which he had recently relieved of severe pain extending from the nose to the eye by means of nasal cauterization. In his case the patient was neurotic, and he was not sure but that suggestion might have been influential in effecting the cure. Only one week had elapsed since his treatment, and he was interested to know if the relief would be permanent. **Dr. Dye** spoke of the fact that neurotic patients could often be temporarily relieved of pain by operation upon any part of the body. In reply, **Dr. Belt** said the cases which he reported did not belong to this class, and that there was a decided obstruction of the nose capable of producing the symptoms described.

REPORT OF THE COMMITTEE ON LEGISLATION OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA, JANUARY 6, 1902.

The committee on Legislation desires to place on record a statement of the work it has done during the past year, for the information of the successors of the committee, and the members of the Society generally. Various matters have come before the committee for consideration. Some have been of minor importance and have been readily disposed of; others have not yet developed sufficiently to come before the Society with advantage. The most important matters with which the committee has had to do have been (1) the filtration of our water supply, (2) the recently enacted code of law, and (3) the medical inspection of public schools.

(1) Largely through the efforts of this committee, acting in conjunction with the committee on filtration, and under instructions from the Society, Congress adopted the slow sand system of filtration as the method to be used for purifying the water supply of this District, as opposed to the so-called mechanical system.

(2) Through the efforts of this committee the code of law for this District was amended so that when passed it contained a paragraph definitely preserving the integrity of every law relating to medicine, pharmacy, dentistry and public health, which laws without such a paragraph would in all probability have been repealed.

(3) Definite results have not yet been accomplished with reference to the medical inspection of schools, but the committee has confidence in the efficacy of the work thus far done as tending to carry into effect the wishes of the Society, viz: the establishment of medical inspection of the public schools of this District under proper medical supervision—that is, under the supervision of the Health Department. A carefully prepared report supporting the position taken by the Society has been submitted, with the approval of the Society, to the Commissioners and to the Board of Education, and will be submitted later on to the Committees on Appropriations of the Senate and the House of Representatives. Hearings have been obtained before the Board of Education and the Commissioners, at which the necessity for the establishment of the proposed system of medical inspection under the Health Department was orally set out. It will be the duty of the next Committee on Legislation, or possibly of the proposed Executive Committee, to press this matter on the proper committees of Congress, and it is believed that with earnest effort on the part of such committee and the active co-operation of members of the Society generally, the wishes of the Society in this matter cannot but be met.

D. S. LAMB, *Chairman*.

THE PUBLICATION OF A PERIODICAL BY THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

REPORT OF THE EDITORIAL COMMITTEE OF 1902.

FEBRUARY 12, 1902.

On December 18, 1901, the following recommendation, contained in the annual address of the retiring President, delivered that evening, was referred to the Committee on Editing the Transactions: "Recommended, that this Society, beginning with 1902, publish a monthly journal, to be called by some name yet to be decided on, and of not less than 32 pages."

It seems to be understood that the Editorial Committee appointed by President Adams, January 15, 1902, is the one charged

with the consideration of and report upon the said recommendation.

This committee has accordingly considered the recommendation, and would submit the following report :

1st. It is our belief, derived from conversation with a number of members of the Society, that a periodical, published by the Society, is generally desired.

2d. We have made inquiry concerning the cost of such periodical, and find that 400 or 500 copies of a bimonthly of 48 pages, the page being of the same size as the *Albany Medical Annals*, and the style much the same, would cost from \$400 to \$415 a year ; that a 56-page bimonthly would cost from \$475 to \$490 a year ; that a 64-page would cost from \$530 to \$550 a year, and so on.

3d. The figures given are the first cost, namely, for the printing and delivery of the printed numbers to the custody of the committee, and include a cover with two printed pages.

4th. To this first cost must be added that for making corrections, which is charged for by the hour. We would expect, however, that, by adopting a rule that no copy should be received for printing unless already typewritten or otherwise printed, the cost of corrections would be made practically nothing.

5th. To the first cost also must be added that for mailing. Unfortunately we would be unable to get the benefit of the second-class rates of one cent a pound, since the numbers would be almost entirely delivered by carriers in this city. Each number, however, could be mailed under a 2-cent stamp ; so that 400 copies, mailed every two months, would cost \$8 for each number, or \$48 a year for the six numbers.

6th. Including the postage, therefore, a 48-page number would cost the Society per year from \$450 to \$465 ; a 56-page number, from \$525 to \$540 ; a 64-page number, from \$580 to \$600. This last amount is about what the transactions cost for 1900.

7th. The committee would agree that during the year of their appointment the editorial work, the handling and mailing of the numbers, and the necessary correspondence, would be attended to without cost to the Society. The items of expense, therefore, given above include all that the committee believe the Society would be called on to meet.

8th. The committee has considered the question of advertisements, and think that a number of unobjectionable advertisements could be obtained, the proceeds of which could be used either toward paying the cost of publishing or for purposes of illustration.

9th. The committee has also considered the question of admitting to the printed pages the proceedings or abstracts of the proceedings of other medical and scientific societies of this city, and the papers or abstracts of papers read before the same, and would favor the proposition on condition that such societies pay a sufficient sum per page to reimburse this Society for its outlay.

10th. The committee also believes that information of a medical or semi-medical character that would have both local and general interest, could be obtained from the medical institutions of this city, and from the medical and scientific bureaus of the municipal and general governments. It is customary to print all this supplementary matter in type somewhat smaller than that of the main object of the publication.

11th. The committee has also considered the question of "editorials," and believe that these should be confined to the *business* side of the periodical; and that opinions on medical subjects should be presented only by way of the proceedings or papers read.

12th. The committee would suggest as an appropriate title for such periodical a paraphrase of that of the "Albany Medical Annals," which covers just about the same ground proposed for the periodical we recommend, namely, the "Washington Medical Annals; Journal of the Medical Society of the District of Columbia."

13th. The periodical could be furnished to subscribers at the following rates: 48 pages, 20 cents, or \$1.25 a year; 56 pages, 25 cents, or \$1.50 a year; 64 pages, 30 cents, or \$1.75 a year; 72 pages, 35 cents, or \$2.00 a year.

14th. In conclusion, the committee would state its own conviction that some such medical periodical as has been suggested should be published at this, the national capital, and would therefore recommend that the committee be authorized to publish a bimonthly medical journal of the style and character and with the title proposed, beginning with March 1, 1902, or as near that date as practicable; that the total cost for the year shall not exceed — dollars, and that the Treasurer be directed to pay the required amounts in bimonthly installments.

D. S. LAMB,
WALTER A. WELLS,
V. B. JACKSON,
Editorial Committee.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.*

Stated Meeting, Monday, January 6, 1902.—The President, Dr. D. S. Lamb, in the Chair. Over 65 members present.

The following applications for active membership were read: Robert S. Beale, M. D., Columbian Univ., 1900; S. Clifford Cox, M. D., Columbian Univ., 1892; Frank E. Gibson, M. D., Colum-

* There is much detail in the Secretary's record, such as the names of members and visitors present at the meetings, the names of delinquent members, motions and amendments not adopted, &c., &c., which the Editorial Committee, after consultation with members, concluded were not of sufficient interest to publish.

bian Univ., 1899; Samuel H. Greene, Jr., M. D., Columbian Univ., 1900; Norman R. Jenner, M. D., Howard Univ., 1890, and Georgetown Univ., 1891; Eugene L. LeMerle, M. D., Columbian Univ., 1897; Henry C. Macatee, M. D., Columbian Univ., 1900; Elliott C. Prentiss, B. S., M. D., Columbian Univ., 1900; Jesse N. Reeve, M. D., Georgetown Univ., 1893; D. Baen Street, M. D., Columbian Univ., 1897; M. Louise Strobel, M. D., National Univ., 1896.

The Treasurer, Dr. Franzoni, read his report for 1901. The following is a summary:

Cash balance Jan. 1, 1901,	\$1,168.94
Loan at 6 per cent. interest,	1,000.00
Receipts: Initiation fees,	\$130.00
Interest from all sources,	82.17
Assessments collected,	1,020.00
	<hr/> 1,232.17
Total,	\$3,401.11
Expended, per vouchers,	1,130.80
	<hr/>
Balance Jan. 1, 1902,	\$2,270.31
	<hr/>
Assessments due for 1900,	\$100.00
" " " 1901,	584.00
	<hr/>
Total due,	\$684.00

MEMBERSHIP.

Dropped Jan. 1901,	1
Resigned,	3
Died,	11
	<hr/>
	15

Membership Jan. 1, 1902, 285.

The report of the committee on auditing the Treasurer's accounts for 1901 was read, and recommendations 1, 2 and 5 were adopted *seriatim*; the consideration of 3 and 4 was postponed until the next regular meeting.

The President announced the following essayists for 1902: January, Dr. Kober; February, Dr. McArdle; March, Dr. Reburn; April, Dr. J. Taber Johnson; May, Dr. J. T. Howard; June, Dr. Kleinschmidt; October, Drs. Acker and Loring; November, Dr. G. Wythe Cook; December, Drs. Richey and Frey.

Dr. W. W. Johnston was elected a vice-president of the Washington Academy of Sciences for 1902.

A statement from the Committee on Legislation, reviewing its work during the previous year, was read. See page 78.

The following were elected officers for the year 1902: *President*, S. S. Adams; *Vice-Presidents*, J. W. Chappell, A. R. Shands; *Corresponding Secretary*, T. C. Smith; *Recording Secretary*, F. P. Morgan; *Treasurer*, C. W. Franzoni; *Librarian*, E. L. Morgan.

The following were elected a Board of Censors: G. Wythe Cook, D. Olin Leech, J. F. Moran, T. N. McLaughlin.

An assessment of \$4 per member was levied for the current year.

Adjourned Stated Meeting, Wednesday, January 8, 1902.—

The President, Dr. S. S. Adams, in the Chair. Over 32 members present.

A fifth member of the Board of Censors was elected, Dr. J. W. Bovée.

The following amendment to the Constitution was adopted:

“Strike out from article 4, section 4, of the Constitution (see page 6) the following words: ‘Also a Committee on Legislation consisting of 9 active members;’ and the word ‘also’ in line 4 of said section. Change section 4 to 5 and section 5 to 6 and make new section 4 to read as follows: ‘There shall be an Executive Committee composed of 15 active members appointed by the President in January, 1902; of the members thus appointed 3 shall serve for 1 year, 3 for 2 years, 3 for 3 years, 3 for 4 years, and 3 for 5 years. The President, after his election at the stated meeting in January, 1903, and in each succeeding year, shall fill the vacancies on this committee by the appointment of three active members who shall each serve for 5 years. When a vacancy occurs upon this committee, by resignation or otherwise, the President shall appoint an active member to fill the unexpired term.’ Under section 8 of the by-laws (see page 12) strike out the paragraph in regard to legislation and insert the following: ‘It shall be the duty of the Executive Committee to keep informed on all matters concerning the interests of the medical profession generally and of this Society and its members in particular; to consider such resolutions as may be referred to it by the Society, to suggest improvements in the conduct of the business of the Society; to consider and report upon matters requiring legislative action; to represent the Society before Congress and the Commissioners of the District of Columbia; and to report its operations to the Society from time to time as occasion may require, together with such recommendations as it may deem proper.’”

The regular meetings of the first session began **Wednesday, January 15, 1902.**—The President, Dr. S. S. Adams, in the Chair. Over 62 members and some visitors present.

Recommendations 3 and 4 in the report of the Auditing Committee were referred to the Executive Committee.

Dr. J. B. Clayton, U. S. A., was elected a member by invitation.

The President announced the following committees for the current year :

Executive Committee.—To serve one year: Wm. B. French, W. W. Johnston, Chairman; E. W. Reisinger. Two years: Wm. C. Woodward, D. P. Hickling, Z. T. Sowers. Three years: G. N. Acker, E. A. Balloch, J. W. Bovée. Four years: T. N. McLaughlin, G. M. Kober, G. Wythe Cook. Five years: W. G. Morgan, C. W. Richardson, G. L. Magruder.

Public Health.—J. W. Chappell, Chairman; J. T. Cole, J. A. Stoughtenburgh, G. W. Wood, Anne A. Wilson, L. Eliot, W. L. Robins.

Editing the Transactions.—D. S. Lamb, Chairman; W. A. Wells.

Essays.—T. C. Smith, Chairman; M. Griffith, N. P. Barnes.

Washington Directory for Nurses.—H. L. E. Johnson, Chairman; Ada R. Thomas, W. N. Fisher.

Microscopical Examinations.—J. B. Nichols, Chairman; Collins Marshall, D. W. Prentiss.

Dr. I. S. Stone presented a specimen, with case-history, from a choledochotomy. Discussed by Drs. Carr and Bovée. See page 28.

Dr. A. F. A. King read a paper on "A New Factor in the Etiology and Treatment of Malarial Fever: Destruction of the Parasite by the Ultra-violet Rays of Fluorescent Light." See page 1.

Wednesday, January 22, 1902.—The President, Dr. S. S. Adams, in the Chair. Over 65 members and some visitors present.

The committee appointed to dispose of the books in the library of the Society reported that the Librarian of the Surgeon General's Office had agreed to receive a portion of them. The committee would see that the remainder were given to the City Library, in accordance with the recommendation adopted by the Society.

Dr. Herman B. Parker, U. S. Marine Hospital Service, was nominated for membership by invitation.

The President appointed Dr. V. B. Jackson to fill the vacancy upon the Editing Committee.

The following cases and specimens were presented :

By Dr. Reisinger : "Exfoliation of the Skin Due to Quinine." Discussed by Drs. McLaughlin, Magruder, T. C. Smith and J. Dudley Morgan. See page 34.

By Dr. T. C. Smith : "Fatal Hemorrhage from the Stomach Due to Cancerous Ulcer." Discussed by Drs. D. S. Lamb, Magruder and Reed. See page 36.

The President appointed the following Committee on "Smoker": Drs. Reisinger, Moran and F. P. Morgan.

Dr. King's essay was discussed by Drs. Reed, Stiles, Wm. Ward, Kober, Keech, Chappell, Kleinschmidt and Belt. See page 24.

Wednesday, January 29, 1902.—The President, Dr. S. S. Adams, in the Chair. Over 66 members and some visitors present.

Dr. Hermann B. Parker, U. S. M. H. S., was elected a member by invitation.

Dr. J. H. Ford, U. S. A., was nominated for membership by invitation.

The Committee on Safe made the following report :

The committee appointed by the Medical Society to consider the question of the purchase of a safe for the preservation of the archives of the Medical Society, beg leave to report : 1st. That they think such a purchase is desirable. 2d. That a safe is offered them, in good preservation, which has been used by the "Evening Star" Newspaper Company, the measurements of which are: outside, 4 ft. 9 in. by 2 ft. 5 in. by 3 ft.; inside, 14 by 20 by 35 inches. The cost of the safe is \$60, or \$65 delivered. The committee recommends the purchase of the safe. Signed, W. W. Johnston, G. L. Magruder, E. L. Morgan.

The report was approved, and the committee was instructed to make the purchase.

The President called attention to the death of Dr. Armistead Peter. He was one of the oldest members of the Society, being about the eleventh on the roll. He was well known to many of his brother practitioners, young as well as old. He was a faithful physician, and enjoyed the confidence of many persons. He was not a regular attendant at the meetings because of a difficulty of speech and hearing, but was nearly always present at memorial meetings. A memorial committee was appointed to take suitable action.

The President announced that, acting upon the recommendation of Dr. Acker in his presidential address, he had solicited subscriptions for a prize-essay fund from a number of his personal friends, and was much gratified at the result. He had addressed twenty-five members, and had received twenty-one replies, all of them favorable. He expected to have a fund of \$250 by the end of the week. The plan was to offer to the members of the Society who had graduated in medicine since December 31, 1890, a prize for the best essay submitted under certain conditions. The decision would be made by a committee appointed for the purpose. The question of the details of the contest, and the necessary arrangements therefor, was referred to the Executive Committee.

The following cases and specimens were presented :

By Dr. Acker : "General Tuberculosis." Discussed by Drs. Glazebrook and Woodward. See page 65.

By Dr. Franzoni : "Malignant Diseases of Lungs, Ribs and Spleen." Discussed by Drs. W. W. Johnston and Borden. See page 38.

By Dr. Bovée: "Ovarian Tumor." Discussed by Dr. J. Taber Johnson. See page 40.

Dr. W. W. Johnston read the paper of the evening. Subject, "The Diagnosis and Treatment of Influenza Pneumonia." To appear in the next number.

Wednesday, February 5, 1902.—The President, Dr. S. S. Adams, in the Chair. Over 60 members and some visitors present.

The Treasurer reported for January, 1902, received, \$264.20; disbursed, \$33.40.

Dr. J. H. Ford, U. S. A., was elected a member by invitation.

The Corresponding Secretary was instructed to send a copy of the Transactions of the Society for 1901 to each of the medical libraries of the Army and Navy.

The following cases and specimens were presented:

By Dr. D. S. Lamb: 1. "Pneumonia and Endocarditis." Discussed by Dr. Nichols. See page 63. 2. Specimens showing Buchhold's method of preservation and mounting. Discussed by Dr. Glazebrook. See page 66.

By Dr. Stiles: "Lamblia Duodenalis." Discussed by Drs. Nichols, Bovée and J. P. Miller. See page 64.

By Dr. Bovée: "Tubo-ovarian Cyst." See page 67.

Dr. W. W. Johnston's paper of the previous meeting was discussed by Drs. Vincent, J. Dudley Morgan, Nichols, Woodward, A. F. A. King, Compton, J. H. Ford, D. S. Lamb, Glazebrook, Hickling, Wm. Ward, M. F. Thompson and S. S. Adams. To appear in the next number.

Wednesday, February 12, 1902.—The President, Dr. S. S. Adams, in the Chair. Over 63 members and some visitors present.

The Editorial Committee made report concerning the publication of the transactions of the Society for 1902. Referred to the Executive Committee. See page 79.

Dr. W. W. Johnston called attention to certain portions of the recent report of the Board of Charities concerning the proposed Municipal Hospital, and moved that the report be referred to the Executive Committee for consideration. So referred.

The President stated that the books recently given by this Society to libraries would be allowed to go out into circulation unless the Society expressly stated that they were given as books for reference. He thought that this should be done. Dr. D. S. Lamb, of the Library Committee, said that it was not likely that anyone would desire to take them out, as they were mostly reference books.

The following cases and specimens were presented:

By Drs. Lamb and Woodward: "Subcapsular Hemorrhage of Liver in the New-born." Discussed by Drs. T. C. Smith, Wm. Ward, Wood, Bovée and Woodward. To appear in the next number.

Dr. Franzoni : "Skiagraphs of Fracture of Leg." Discussed by Drs. Borden and Bishop. To appear in the next number.

By Dr. Bovée : "Ruptured Tubal Pregnancy." To appear in the next number.

Dr. Kober read the monthly essay: "The Causation of Disease." Discussed by Drs. Mayfield and Woodward. See page 41.

Special Meeting, February 18, 1902, in memory of Dr. ARMISTEAD PETER.—The President, Dr. S. S. Adams, in the Chair.

The report of the Memorial Committee was read. Memorial addresses were made by Drs. Mackall, J. Taber Johnson, Kleinschmidt and Yarnall, and the report was unanimously adopted. See page 68.

WASHINGTON MEDICAL ANNALS; JOURNAL OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

On the 19th of February, 1902, the Society instructed the Editorial Committee for the current year to proceed with the publication of a bimonthly journal having the above title. The first number is herewith issued, an edition of 600.

The ANNALS will contain the papers read and cases presented at each meeting, together with the discussions thereon; the exercises of memorial meetings; such committee reports and business matter as appear to be of sufficient general interest; such proceedings and papers as may be received from other medical societies of this District; and a miscellany gathered from the various medical colleges, hospitals, dispensaries, laboratories, museums, &c., in the District.

The committee expects to limit *editorials* to the *business* side of the journal.

Should the outcome of the publication warrant, the scope of the journal will probably be enlarged.

D. S. LAMB,
WALTER A. WELLS,
V. B. JACKSON,
Committee.

Medical Miscellany.

Bureau of Plant Industry, Department of Agriculture.—THE POISONOUS ACTION OF CHEMICALS ON PLANTS.—In the rather recently opened field of plant toxicology, the newer conceptions of the state of things existing in solutions have led to very interesting results. It appears that in inorganic compounds the part-molecules, or *ions*, are responsible in large measure for the harmful effects. In general, the effect is largely produced by the *cations*. A series of comparative studies made on the root of *lupinus albus*, the white lupine, shows that it is possible to construct a scale of the poisonous activity of the *cations* and the *anions*. Such a scale shows that the poisonous action is not a function of the atomic weights of the elements concerned, except within group limits, and often it is not the case even here. In general, the greater the specific gravity of the metal, the more pronounced is the poisonous action. An exception is seen in the case of the hydrogen *ion*, in which the small specific gravity goes with a strong toxic action. The characteristic chemical and physiological properties of an acid are due to this *ion*. Again, the *cation* formed by lithium compounds, a very light metal, is more poisonous than the heavier sodium or potassium *ions*.

From the study with plants, it is thus far hardly possible to satisfactorily correlate intensity of toxic action with any chemical or physical property of the elements. Doubtless, accommodation to substances met with in nature plays an important rôle. A study of several classes of organic compounds has also revealed a distinct relation between the poisonous properties of substances and the radicles present in the molecule. Here the formation of *ions* seems usually to be less influential than in inorganic compounds.

A practical interest attaches to various phases of this work. The varying ability of organisms to resist the action of poisons has made it possible to apply the principle of differential poisoning in ridding many crops of noxious forms of life. The action of antiseptics is another phase of the same thing. The studies referred to have developed a number of compounds having a strongly toxic action on higher plants and on bacteria, while appearing to be much less harmful to the higher animals. The study of certain of the more promising substances is now in progress in the Office of Plant Physiology and Pathology. There is strong hope of securing useful antiseptics through these studies.

R. H. TRUE.

The Episcopal Eye, Ear and Throat Hospital.—REPORT FOR THE YEAR 1901.—The visits made to the Hospital and Dispensary in 1901 by 2,559 patients numbered 11,578, showing an increase of 2,007 visits over 1900; 1,249 were white



and 1,310 colored. Patients admitted into the Hospital, 271, who spent an aggregate of 3,856 days therein, an increase of 450 over the year 1900. Of the House patients 140 were free and 131 pay patients in the wards and private rooms; 207 were white and 64 colored.

Operations were performed, 475—267 on the eye, 69 on the ear and 139 on the nose and throat. Cataracts were operated on, 63; nearly all successful. Operations were done on 10 cases of glaucoma and 24 on crossed eyes; 16 eyes which had been lost by disease or accident were removed. Grafting of mucous membrane from the eye of a rabbit was done in two cases to permit the wearing of an artificial eye. Of the operations on the ear, 15 were on the mastoid bone, for a condition of imminent danger. The chief operations on the nose and throat consisted of 23 cases of removal of adenoids, 11 operations on deflected septa and 49 on enlarged tonsils.

Since the opening of the Hospital in April, 1897, 37,726 visits have been made to the Hospital by 8,026 patients and 1,360 operations have been performed.

E. O. BELT.

Washington Asylum Hospital.—CASES NOW UNDER TREATMENT IN WARD 4.—There are at present 31 patients with 45 different diseases: 2 cases of hemiplegia of eight years' duration with no involvement of heart or kidneys; 3 of mitral-regurgitation, all having albumen with epithelial and hyaline casts; 2 of mitral stenosis with albumen and hyaline casts; 1 of aortic stenosis and 1 of aortic regurgitation, both showing albumen and casts; 2 of aneurism of the carotid artery; 1 of chronic endocarditis; 1 of arterio-sclerosis; 1 of catarrhal jaundice; 1 of inguinal hernia; 2 of carcinoma of uterus and adjacent structures too far advanced for operation; 1 of large sebaceous cyst of scalp; 2 of pregnancy; 1 of burn of foot (3d degree); 3 of constipation; 2 of epilepsy; 2 of senility; 1 of acute alcoholism; 1 of lacerated wound of scalp; 1 of malaria of the double tertian form; 1 of varicose ulcer of leg; 3 of chronic rheumatism without any involvement of heart; 2 of influenza; 1 of catarrhal pneumonia; 2 of secondary syphilis; 1 of chancroid of rectum with suppurating inguinal glands; 1 of tubercular ulcer of breast; 1 of tubercular peritonitis which is rapidly improving after operation; 1 of chronic parenchymatous nephritis with no lesion of heart; and last, but not least, a very interesting case of a girl about one month pregnant, from whom I removed a cystic ovary last November and two months afterward, in spite of the most careful attention, she aborted. I have since removed the other ovary for cystic disease which had developed almost entirely since the former operation.

D. P. HICKLING.

Lutheran Eye, Ear and Throat Infirmary, Washington, D. C.—This Infirmary, corner 14th and N Streets, N. W., has just completed the twelfth year of its existence. A review of its work during this period shows that it has been a factor in alleviating the needs of the helpless and making them able to help themselves by curing such diseases as are always a serious impediment to self support. During these 12 years 15,568 new patients have been

registered and about 65,000 visits made. No special appeals have had to be made for its support, and the treasury has not been overdrawn. The expenses have been very limited in comparison to the *large* results, and the management of this charitable institution has demonstrated what can be accomplished at a minimum money expenditure. It is controlled by a Board of Managers from the different Lutheran churches of the city, but is entirely free to all needy poor without regard to race or creed, and its register shows a very much larger per cent. of applicants from other denominations than from that which maintains it.

The attending physicians are Drs. W. K. Butler, O. A. M. McKimmie, Jas. Stuart, D. W. Prentiss, S. H. Green, Jr., E. G. Seibert. Consulting Surgeons: Drs. Frank Hyatt and Geo. N. Acker. The Infirmary is open daily, except Sunday from 1 to 2 P.M.

W. K. BUTLER.

The Woman's Clinic, Washington, D. C.—Organized in September, 1890, and incorporated the following June. The work has steadily increased until from its small beginning it now ranks with the largest dispensaries in the District. The record of the first year showed 980 visits; that of the sixth year 4,219; and since that time there has been an average of not less than 5,000. These figures practically show the confidence felt in the women physicians of Washington, and also demonstrate the need and usefulness of such an institution.

The work is well and carefully done by an earnest band of women physicians and their co-workers. Much has been accomplished with very limited means. The Woman's Clinic has had the encouragement and assistance of many of our most prominent and distinguished men physicians. It has come to be understood by broad-minded men that there is a place for women in the medical profession.

It has frequently happened that surgical, medical and obstetrical cases have applied for admission to the Clinic, but for lack of funds and necessary hospital facilities they have been obliged to go elsewhere. The Woman's Clinic was incorporated for hospital as well as dispensary work, and it is hoped that at no distant day a woman's hospital will be established in Washington, where it is needed as much as in any other city of our country.

Officers for year ending Nov. 1, 1902: *President*, Mrs. Emily Lee Ragan; *First Vice-President*, Dr. D. S. Lamb; *Second Vice-President*, Mrs. W. E. Burleigh; *Secretary*, Mrs. Mary F. Case; *Treasurer*, Miss Minnie E. Heiberger. *Clinic Staff*: Dr. Ida J. Heiberger, Dr. Ada R. Thomas, Dr. Phebe R. Norris, Dr. Isabel Haslup-Lamb, Dr. Adeline E. Portman, Dr. Kathryn Lorigan, Dr. M. L. Strobel, Dr. A. Frances Foye. MARY F. CASE.

U. S. Fish Commission.—AN INFECTION IN TROUT.—During recent years domesticated brook trout (*salvelinus fontinalis*) have

suffered more or less from a disease which, when it had once attacked, usually carried off most of the fish in the pond concerned. Field bacteriological work during the past summer showed the cause to be bacterial infection. The heart blood of the dead and dying trout examined yielded in every case an organism usually in pure culture, and experiments in inoculating it and reproducing the disease in healthy trout and recovering the organism were apparently conclusive. Over one-half of the fish which succumb are perfectly normal in appearance. The external lesions, when they occur, appear to be essentially hemorrhagic infarcts, the extravasates of blood varying from a slight suffusion in the flesh immediately beneath the skin to a distinct hematoma. The latter contains a bloody liquid which is not purulent, and contains, beside the ordinary elements of the blood, degenerated muscle fibers and large numbers of bacteria. A description of the organism will appear probably in the near future.

As the brook trout is an important food species, the bearing of this disease on the edibility of the affected fish becomes of interest. The trout do not fall off in condition, but remain plump and well nourished. Specimens dead of the infection have been eaten after cooking in the ordinary way, and did not differ in quality or effects from perfectly healthy trout. The uncooked flesh is probably harmless to warm-blooded animals. A cat which has habitually eaten these dead trout raw shows no ill effects. The organism concerned has a low thermal death point, and is killed in less than twenty-four hours by exposure to the body temperature, from which its non-pathogenicity for man may be inferred. The disease has never been reported among wild trout.—M. C. MARSH.

WASHINGTON MEDICAL ANNALS

DIAGNOSIS AND MANAGEMENT OF SOME OF THE
MORE COMMON LESIONS OF THE ADULT KNEE.*

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The invitation so courteously extended by the President and Secretary to read a paper on this occasion was simply irresistible, and the honor done a sojourner in your city is, I am sure, not an empty one. The title chosen ought to call out a discussion as beneficial to the reader as to the hearers and participants, and it shall be my aim to present the subject in a manner that will elicit an expression of opinion on certain phases of knee-joint diseases by no means clear to the majority of physicians and surgeons engaged in special, as well as in general practice.

I have made no attempt to report in detail a long series of cases, but have tried to report in abstract a number that will bear upon the more common diseases and disorders of the joint.

The most common lesion, as all of you know, in the knee of childhood is a tuberculous epiphysitis, familiarly known as "white swelling," and the management of such a lesion may be embraced in two terms—immobilization and protection in any and all stages of the disease. The active practitioner is called upon to diagnose a number of lesions occurring in the adult knee, and remarks on this subject are never out of order.

From an etiological standpoint this broad distinction may be made between the diseases of childhood and those of adult life: In the former the bacillus of tuberculosis is the all important factor; in the latter trauma is the most important. Lest the statement may be regarded as too sweeping, let me add that trauma plays a very important role in the causation of *exacerbations* in the tuberculous diseases of bones in children and that the object of

*Read before the Medical Society of the District of Columbia, February, 26, 1902.

treatment is to avoid and minimize the effects of traumata, intrinsic and extrinsic.

Diagnosis in joint disease is of prime importance, and if I were inclined to indulge my predilection, I would devote the entire evening to this one phase of the subject, but my aim shall be to point out the steps only which lead up to correct diagnosis. One of the most important steps is the cultivation of a habit of close observation, and I know of no better way of attaining this end than by a painstaking record of the case. The man who keeps no notes of his cases fails to profit by experience, unless he be gifted with a wonderful memory, and even then he fails to keep in consecutive order the different steps of treatment, and the changes in character that often make a case of absorbing interest. Errors in diagnosis are most frequent where critical examinations are not made. It really takes no more time to inspect both knees, both thighs and both calves, to palpate, to measure and to test functions, at the same time jotting down the results, than it does to discuss with the patient or the family the topics of the day and incidentally the history of the case. After an exhaustive examination preceded by a simple, concise narration of the facts connected with the history, there is often enough time left for a chat on social events, the weather, &c., &c.

The gait is another step which aids one to reach a diagnosis. At my last clinic in the College of Physicians and Surgeons, I was especially fortunate in having for demonstration four men who presented as they walked back and forth across the "pit," four different types of lameness. One held his knee slightly flexed and walked without bending it, bringing his weight on the toes and ball of the foot; this was a case of chronic arthritis ending in ankylosis in faulty position. One walked with knee hyperextended at the moment of contact, heels striking the floor first and yet as he lifted the foot of the lame knee for the next step, the knee was bent over a small arc; this was a case of chronic disease as well, but the sensitive area was along the anterior borders of the joint. One flexed and extended the knee as he walked, bringing the foot down with a kind of "flop," as if there were a loss of power in the quadriceps extensor; he had *hydrops articuli* dependent on renal disease. The fourth man walked with knee perfectly straight dreading the slightest motion as he stepped; his was a case of contusion of the subpatellary bursa.

An injury to the knee may be confined to a small area, and yet the inflammatory extension may be such as to limit the functions of the joint, producing at times a general arthritis, less frequently a simple synovitis. The point of injury is generally marked by ecchymosis at the time the physician is called, and a little palpation will determine the exact focus of injury.

While attending the meeting of the American Medical Association, May, 1896, the daughter of my host, a young lady twenty years old, fell from a bicycle May 4, and within a few hours the joint filled with fluid. I saw her the following day. The synovial sac was distended, and its anatomical boundary could be distinctly mapped out. The patella floated in the fluid. The point that came in contact with the ground was the side of the patella, and it was easily determined just what was the damage done. The surgeon who saw her with me at the time was anxious to apply a plaster of paris bandage, but the young lady demurred because she was anxious to attend a dance that evening. From a pretty extensive experience with strips of rubber adhesive plaster in sprains of the ankle, I felt reasonably sure that a like treatment in this case would favor the resorption of the fluid and bring about a good result in less time than it could be accomplished by the use of plaster of paris; so I strapped the knee at once, not encroaching on the popliteal space, and put her to walking at once. She was able to dance that evening; was around and about the following day, and I saw her on the evening of the 7th, two days later, at a reception. A strapping a few days subsequently sufficed to effect a cure, the fluid having rapidly disappeared. I mention this case simply as an illustration of the behavior of a knee where synovitis is the lesion.

Incidentally, I may mention the treatment which I have found quite efficient in a pure, uncomplicated case. A strip of adhesive plaster about an inch wide and long enough to reach two-thirds the way about the limb is applied about the beginning of the insertion of the ligamentum patellae, running obliquely. A second strip crosses this; the third overlaps the first half way; the fourth the third, and so on, until the upper border of the synovial sack is reached. No attempt is made to fully extend the limb, but it is left in the slightly flexed position in which it is found. Immediately following this is a roller or bandage used to make the plaster adhere more closely. If there is much pain and other

evidence of active inflammation, nothing is better for the next few hours than an ice-bag. Some surgeons who are enamored of this treatment insist on the patient using the limb at once, on the theory that the action of the quadriceps femoris tendon will assist in disposing of the fluid. While this is a tribute to the adhesive-plaster method, I cannot help but feel that the knee-joint is too important for any such experimentation, and, unless a necessity arises for the use of the limb, I prefer to have it used with caution for the next few days. By this time the parts will have shrunk a good deal, and the strapping may be reapplied.

Where synovitis is late developing and depends upon the gradual extension from a localized periostitis or from a detached fringe of the semilunar-cartilage, or from a subpatellary bursitis, the strapping is merely a factor in the management of the case. It is, as we say, an adjuvant. The question of immobilization presents itself for consideration, and a posterior splint, plaster of paris bandage and axillary crutches are often necessary to control the inflammatory reaction. Let me illustrate. A gentleman twenty-two years old, at Yale, presented himself for treatment of a traumatic arthritis December 2, 1901, and I found the thigh only a half-inch smaller than its fellow, the knee from half-inch to three-quarters larger; the normal contour completely effaced and the parts over the internal condyle exquisitely sensitive; he was unable to extend the limb beyond an angle of 150° , or to flex beyond 90° . There was thickening without any marked effusion throughout the entire synovial sac; the prepatellar bursa was not involved. Last summer while playing golf he was conscious one afternoon of straining his knee. There was much pain at the close of the game; he was unable to sleep that night and the synovial sac was much distended the following morning. He regarded it simply as a "golf knee," without knowing exactly what was meant by the term, got a pair of crutches and hobbled around. It grew stiffer and stiffer, and at the end of the week was in the position of marked flexion. Hot fomentations, followed by hot and cold water douche with massage, effected a reduction of the deformity at the end of three weeks. A silk elastic knee-cap was worn as a convalescent dressing, and he regarded himself as apparently well until the beginning of November, two months later. While climbing over some rocks on a geologic expedition the pain recurred; but there was less swelling than before and less

deformity. After moderate use even with the cane or crutches there was increased heat in the parts and his suffering was greater. I was unable to locate the original lesion in this case, but felt reasonably certain that it was in the neighborhood of the muscular attachments around the internal condyle. The treatment employed was light strokes of the Paquelin cautery, with the immediate application of strips of rubber adhesive plaster and a posterior splint. Within a few days I applied a protection apparatus known as the Campbell brace. This consists of a thigh and a calf band of sheet-steel connected by steel bars, jointed at the knee so that the limb may be locked or accorded motion as the surgeon wishes. The bar on the outer side extends to the outer side of the shank of the shoe in front of the heel, an inch above which a free joint is made. The object of this latter device is to prevent too much constriction about the limb for the maintenance of the apparatus in position. It simply distributes the weight and does not give full protection; it immobilizes, and, if complete protection is necessary, crutches may be employed. The cautery was employed about three times a week during the next four weeks, when it was found that he could extend the limb fully to 170° ; the synovial thickening had disappeared and the tenderness over the condyle was much less pronounced. Early in February I gave him a small range of motion in the apparatus, a little short of that he could voluntarily make, and when I saw him last, on the 15th of February, he had a full range of motion—had no tenderness about the knee; was walking easily. The treatment now employed, which I regard as very important in the convalescent stage, is the restoration of power to the quadriceps femoris and the other muscles whose insertion is around the knee. This is accomplished by massage and active and resisting exercises. Just as soon as the muscles are restored, the apparatus can be removed and the cure will have been completed.

The diagnosis of traumatic arthritis is sometimes exceedingly difficult and requires more time than one can give at the first examination. I am reminded at this juncture of a case seen by me in consultation with Dr. Reginald Sayre October 2, 1900. It was in a well grown miss thirteen years old, one of twins. The doctor had been obliged to divide the responsibility with her physician in the country, and the ordinary methods of treatment had proved rather unsatisfactory, so that it became a question for

differential diagnosis between a simple and a tuberculous arthritis. The history was that when she was five years old she had treatment for weak ankles, which extended over a period of two or three years; when eleven years old she fell from a bicycle, striking the patella; two or three weeks subsequently, synovitis developed, and at this time she was seen by Dr. Sayre who advised immobilization in plaster of paris. This was applied by the local physician and was worn for three months; the end of which time found the family much discouraged. Later, crutches and a high shoe on the opposite side; then followed a period of douches and massages, more or less vigorous, active and passive movements. Again Dr. Sayre was called in, advised the Campbell brace with motion at the knee; this was followed by increased swelling of the joint, pain and disability. We found on examination a good deal of infiltration and boggy about the joint, tenderness over the inner head of the tibia, atrophy of thigh one and a half inches, and reflex spasm on extension beyond 100° . The family history was negative, and we both agreed upon a plan of treatment which was fixation of the limb in plaster of paris, applied *secundum artem*, and axillary crutches; ruling out tuberculosis, with one or two interrogation points. The mother protested against the use of plaster and we were obliged to compromise. Dr. Sayre was ill shortly after our consultation, and he referred the case to me for treatment; then came a question of management. I locked the Campbell brace she had, strapped the knee and made use of the crutches, feeling quite sure that I should be able before long to employ the plaster of paris. After a little while I used the Sayre knee splint which she had in stock, but got up so many excoriations from the moleskin plaster that I finally got consent to put the limb in plaster of paris; this was the latter part of November, 1900. I did my best to make the plaster of paris bandage a work of art, and the appreciation on the part of mother and daughter was outspoken. From this time to the present I have had no difficulty whatever in managing the case. The plaster was re-applied every two or three months up to January 18, 1902, when there was no longer any occasion to consider the question of tuberculosis; the limb now is the same size as its fellow, and the range of motion is nearly as good. She is wearing the Campbell brace with a full range of motion; is having massage to the thigh

and calf, active and resistive movements, and the case is acting to a wish.

I could, did time and your patience permit, narrate instance after instance where the question of diagnosis was for a long time difficult, but where a plentiful knowledge of the dangers to be avoided by the proper management of the case have proved satisfactory, and where finally diagnosis became simple enough.

The physical signs of a tuberculous knee, whether in the child or adult, are usually sufficiently pronounced to enable one to arrive at a proper conclusion without delay; but there are instances, especially where the family history is tuberculous, that are extremely puzzling. The loss of contour, the general thickening, the bony enlargement, the reflex spasm, and the extreme chronicity are usually quite enough for a diagnosis.

I am sure you will pardon me if I trespass on your time in a little further elucidation of differential diagnosis. On September 23, 1894, I saw a lady twenty-two years old, whose family history was laden with tuberculosis. She herself was thin, poorly nourished, and while there was no evidence of pulmonary disease, she had been set aside as the next victim. Eleven months prior to this date, while walking on a hard-wood floor, she slipped, fell and struck the inner side of the left knee against the floor. She got up at once and had no inconvenience whatever going about as usual; at the end of two days, however, there was marked ecchymosis on the inner side of the ligamentum patellae and the parts were quite sensitive. Little swelling ensued, but no involvement of the joint proper. After a week or ten days of pain and inconvenience, plaster of paris was employed; she bore this for only a few days and compromised on crutches, which she used for some time thereafter. From that day to the date of my examination, eleven months, there was pain and lameness every day, and both were aggravated by use; her sleep was disturbed by reflex spasm. Four or five weeks prior to my visit, flying blisters were employed and plaster of paris for a week or two. I found distinct tenderness over the semilunar cartilage, some about the internal condyle, but no bony enlargement. Extension beyond 170° and flexion beyond 150° gave pain. There was no effusion into the joint or on either side of the ligamentum patellae; there was one inch atrophy of the thigh. The knee measurement showed a little increase in size over the patella. With the history im-

pressed upon my mind and yet with the lesion apparently confined to the inner edge of the semilunar cartilage, I eliminated tuberculosis, subject however, to revision. I ordered a brace, such as I have described before, a posterior splint to wear at night, and proceeded to give enough protection to the joint, at the same time determined to employ counter-irritation. It was at least a month before any relief followed, and I was inclined to attribute this relief to the plentiful pustular eruption produced by adhesive plaster. I insisted on the brace being locked at the knee and on her being out of doors as much as possible. The case proved a tedious one, and it was fully a year before I was enabled to dispense with the apparatus. In the summer of 1896, she was in Asheville, N. C., troubled with a cough but not dependent on pulmonary lesion. Since that date she has been free from pain and from lameness; rides horseback a good deal, and up to the present time she continues well. Whenever she is in the city, she usually calls to report how well she is doing, but never has occasion to seek my advice about the knee.

While the following case has been to all appearances equally good, the suspicion of tuberculosis continued for a much longer time. A lady twenty-four years old was referred to me on December 6, 1897, by a medical friend, with a note that she had had two different attacks of synovitis, with a large effusion each time, and each time she recovered after being laid up for about two months. A year or two ago she sustained a fall. Since that time she had had pain and enlargement of the knee joint, but not much fluid. The knee was growing larger, and she was daily becoming more crippled. She herself was poorly nourished, and I was inclined, from the examination, to regard the arthritis as probably rheumatic. The knee itself was an inch and a half larger than its fellow, was limited in its range of motion, and presented a good deal of puffiness about the ligamentum patellae. I proceeded to treat her on the same lines as in the preceding case, but soon found it necessary to employ a skin-fitting plaster of paris bandage, which gave much relief. At the end of two and a half years it was still necessary to immobilize the knee, although there was little difference in size, but any use seemed to bring on an exacerbation. The family physician believed that she had tuberculosis of the knee, and I went over the history in detail on April 3, 1899, and found that she had been lame, more or less, since she was

nine years old, but there were such complete remissions from time to time that I could not persuade myself that the lesion was tuberculous. She had at this time a good deal of spasm about the knee ; it ached for two or three weeks continuously. There was extra heat and enlargement, notwithstanding all the protection and immobilization given to the knee, for I had used a perineal crutch in addition to plaster of paris. From this date to January 26, 1901, there was a gradual improvement, both in her physical condition and in the knee itself, but for a year past she had been engaged to be married, and was very anxious to discard apparatus. She could extend easily to 180° and flex to 140° . There was very little tenderness and little thickening on either side of the ligamentum patellae. I gave it as my opinion that she was ready to dispense with the apparatus, provided the X-ray revealed no evidence of bone lesion. I had the picture taken, but it was a poor one, and we were obliged to wait a little longer for a second one, which showed absolutely no bone lesion whatever. I made my report in writing, but heard nothing further from her until October 29, 1901, when my stenographer reported that she had seen a friend of the lady in Harlem, which friend had reported that she went to an osteopathist after the X-ray was taken (she being in possession of the negative), and that she had made a good recovery, was walking without lameness, was married and to all appearances fully restored.

This case, of course, goes to the credit of the osteopathist, who was fortunate enough to get it at a time when massage and active movements were indicated. A case, however, similarly managed and presenting symptoms very like the one just reported, got a return of motion and just as complete a cure in my own hands. The details are so similar that I refrain from presenting them in full. This patient had a tuberculous family history ; had on many occasions during the long course of treatment signs and symptoms so suggestive of tuberculous disease, that he got an opinion from one or two of my colleagues, without my consent ; these opinions being invariably that his case was most likely tuberculosis. At the date of my last observation, December 22, 1899, he had no pain, could extend fully to 180° , flex to 110° , walked without support and regarded himself as thoroughly restored.

The material at hand for a discussion of rheumatic conditions of the knee is so large that I am at a loss just how to present the

different phases with proper illustrations. We have the ordinary acute monarticular rheumatism, developing in a patient with a rheumatic or gouty history. The knee symptoms are sometimes so acute that the patient actually forgets pains and aches in other joints. It happens too, that this exacerbation is caused apparently by a fall or injury, and it is very hard to differentiate between a simple traumatic arthritis and a rheumatic one where trauma is an exciting cause.

One of the simplest forms of rheumatic synovitis may be illustrated by a case occurring in a gentleman seventy-three years old, whom I saw at the suggestion of a friend, in June, 1890. The patient was going about in a wheeled chair. He stated that for two or three months prior to the date of my visit he had had twinges about his knee, but seven weeks prior to that time, without any known cause, the right knee began to swell. The pain was not great, but he found it difficult to walk. He consulted his physician, a homeopathist, who applied a posterior splint with bandages, and he hobbled about on crutches for three or four weeks; then got further advice in the same school, that he should discard splints, inasmuch as his trouble was constitutional. I suggested aspiration, but gave him a good prognosis in any event and saw nothing more of the patient for at least a year. The report at this time was that his knee gradually improved, the effusion within a few weeks disappeared and that he was quite well. He attributed his relief to the free use of Poland water. There are many cases like the one I have just quoted, and the termination is equally satisfactory, but there are some whose history runs very much like the following:

A lady forty-five years old, whom I saw in October, 1894, had been complaining for some years with peculiar slippings about the joints, creakings and manifestations that were regarded as rheumatic. On the 15th of June preceding, she felt sharp pain in the right knee near the ligamentum patellae. It stiffened up a bit and she tried to walk the lameness off. Did not know of any special injury that she had; while in the Adirondacks during that summer, the use of the limb caused much pain, and Dr. Trudeau used the cautery, finally applying a plaster of paris bandage in slight flexion. This gave her a little more relief, but at the time of my visit there was much swelling, the skin was glossy and there was a decided limp, but there was no bony enlargement,

and she could extend easily to 170° and flex to 150° . I found a little crepitation in both knees and made out a case of subacute rheumatic arthritis with some peri-arthritis. The treatment was antirheumatic, a moderate amount of protection was given to the joint and occasional counter-irritation; at the end of two months her husband was not satisfied with the results, and Doctor Janeway was called in consultation. He called it *rheumatoid* arthritis, explained the roughened condition of the synovial sac by the term fibrillation of the cartilages. The consultation produced a wholesome effect on the patient, who was of a nervous temperament, and the treatment was continued. In February, 1895, the knee was in a much better condition, there was still some crepitation felt on movement, and along the tibia was a mild grade of psoriasis; she went abroad shortly after this time, and January 17, 1897, her husband reported that he took her to some bath establishment where active and passive movements were employed by a masseur; finally, one day a rather sharp flexion was made and some adhesions were broken up with an audible click. From that time she had very little trouble, discarded the braces, and was regarded as restored.

In some instances there is enough fluid in the joint to justify aspiration, especially where the fluid proves rebellious to other treatment. A gentleman thirty years old came under my care in July, 1896; had been for a long time a visitor at the various hot springs throughout the country on account of hereditary gout. I aspirated his knee on one or two occasions, sent him to Carlsbad in 1898 and to Glenwood Springs in the summer of the same year; heard nothing more until the spring of 1901, when I found him in a private hospital in New York, after an operation for appendicitis; he showed with great glee how free from disease was his knee, and was positive that the Glenwood Springs had completed the cure.

I desire to call your attention to a severe type of rheumatic knee which is attended with deformity, and which yields to forcible correction, and I should like to tell you, if I could, how to distinguish the cases that are amenable to relief and those that are not. The rheumatic joints that are complicated by peri-arthritis, involving the soft parts, are all, in my judgment, amenable to relief, while those that are complicated by bony deposits about the joints, known as arthritis deformans, are very difficult

of management. I am well aware that this disease is not regarded by many clinicians and pathologists as rheumatic, yet I confess that the line of demarcation is not always so well drawn. After a little observation, reinforced by an X-ray, a hard and fast diagnosis can be made. In the early stages, before the periosteal thickening can be recognized, one is obliged to suspend judgment.

In August, 1891, a lady fifty years old appealed to me for relief from a deformed knee, the subject of a good deal of periarticular swelling. Twenty years prior to this date she had sprained this knee while stepping out of a carriage, but it was three months before she was obliged to take to her bed, where she remained for three or four months. At this time one or two other joints were involved. Twelve or fourteen years later she sprained this knee again, the exacerbation lasting several weeks, and ten months prior to the date of my visit it was sprained the third time, and she was on crutches. She was stout, but apparently free from any nervous disease. My record shows the usual thickening change in contour, limitation of movement, exquisite tenderness, etc., etc. The right ankle was in a measure involved, and I had no difficulty in making a diagnosis. It took her just fifteen months to decide upon the treatment I advised. In the mean time she had been a little better and worse. The treatment which I adopted was a double inclined plane, with weight and pulley, the cautery, potassium iodide, finally plaster of paris; later, a splint, when she was able to walk. The case was most obstinate, but finally yielded, and at the end of five or six years she was perfectly restored, without any impairment of function. For the past four years she has been engaged in missionary work in the tenement house district, climbing all kinds of stairs, exposed to all kinds of weather, and there has been no relapse. I reported her case in full at a meeting of the Practitioners' Society in February, 1901.

A case which proved almost as obstinate, and yet as satisfactory, was in the person of the wife of an Army officer, where treatment was begun in April, 1894. The left knee was so much involved that it looked very much like a sarcomatous knee, and but for the presence of the subacute arthritis in the other knee I should have made this diagnosis. After the swelling subsided and I was able to get her about on a brace and crutches, I relied for complete reso-

lution on skin-fitting plaster of paris bandages, renewed every six or eight weeks. It was indeed gratifying to find on every occasion a marked diminution in the size of the knee, a larger range of motion, and when all infiltration had subsided I then resorted to convalescent treatment with a perfect restoration of function, ability to walk without lameness, in other words—a cure.

When the arthritis involves several joints in both upper and lower extremities it is possible to reduce deformity and get the patient on his feet. If relapses are apt to occur the subsequent management becomes exceedingly difficult. I have in mind at present a case in a lady twenty-eight years old, who presented deformity of both knees, both ankles and both elbows as well as the wrists. The hot-air treatment had been employed without material benefit, and she had despaired of ever leaving her wheelchair. The history is the usual one. Under an anaesthetic, in October, 1898, I brought both knees from a position of sharp flexion down to 180° and applied plaster of paris; opiums were necessary to relieve her pain, and at the end of a month I dispensed with the plaster. It required very little apparatus to maintain the good position obtained; massage was employed with questionable value; finally I resorted to a mode of correcting the deformity of the ankles which proved highly successful. This was the employment of as much force as she could stand without an anaesthetic, followed by a skin-fitting plaster of paris, to be followed in two or three weeks by a repetition of this procedure. In the spring of 1899 she was walking quite easily without assistance, and continued to improve, up to the fall of 1900, when mechanical treatment was no longer necessary. I was called again January 10, 1902, on account of a pretty sharp attack involving the left knee and the right elbow; since I had seen her last the friends had urged upon her the necessity of having constitutional treatment, saying it is all very well to get rid of deformity and get on one's feet, but rheumatism must be combatted by internal medication. I found that she had been getting too much of this, that the massage had been too vigorous and that the joints had been taxed too heavily, so that rest was again necessary; the exacerbation had been relieved at the time I left the city, and I have no hesitation in making a good prognosis.

In striking contrast with the cases just narrated, is that of one occurring in a lady thirty-five years old, who gave a similar

history, but as complication, an excessively irritable spine, supplemented by great mental strain and neurotrophic changes in the skin and subcutaneous tissue about the joints. I resorted to gradual correction of the deformity extending over a period of two months; at the time she left the hospital, January, 1891, she could flex both knees to 90° and was walking with a little assistance. I insisted on a liberal amount of milk, cod liver oil and an occasional course of potassium iodide. Good reports came from time to time, and at the end of six months, she was able to discontinue the apparatus. Ten years later she referred a patient from her part of the country to me, and the report came that she herself was almost helpless; that nearly all of her joints were affected and that she went about in a wheeled chair.

An old sea captain, sixty-four years old, from Fort Jefferson, L. I., was similarly affected in 1889. His deformity was corrected under ether in January, 1890, and he was finally put on his feet. I heard nothing further from him until January, 1901, when an old friend reported that he had become entirely helpless.

Closely allied to rheumatism is a sharp attack of arthritis, developed from exposure to cold; occasionally there is a crepitation in the other knee, but never in a sharp attack. In writing this paper, I have before me reports of a number of cases, from which it is difficult to make a proper selection. Take as a very good example that occurring in a man forty-two years old, seen by me in January, 1897. The history was that seven weeks before he was chilled a little, and on the following day had some fever; the third day complained of pain in his knee; his physician was already treating him at this time for eczema. The day following this pain in his knee, he had a little pain in his left shoulder but it was evanescent; the knee became rapidly worse, there was great swelling and deformity and the infiltration seemed phlegmonous in character. At the time of my visit I could detect no fluctuation; the knee was held flexed at an angle of 135° and was very sensitive. I applied a skin-fitting plaster of paris bandage at once, and this gave relief. By renewing the plaster every two or three weeks I succeeded in getting the limb quite straight, and in April there was a small range of motion. In June, 1897, I removed the plaster and found the contour of the knee very nearly restored; a small range of motion and freedom from pain on handling it.

The hot-air treatment was now employed, supplemented by massage. He was soon going about on a brace, but there was no increase in the range of motion. In July he went to Clifton Springs and returned August 23, after a full course of baths. There was at this time no motion whatever in the knee; he declined attempts of motion under an anaesthetic and took, I believe, a course of treatment at the Zander Institute. From December, 1897, up to the present time, I have seen him going about the city with his knee absolutely stiff, and he told me February 10, that while he had no motion whatever, he was entirely free from pain and discomfort. A lady thirty-one years old, with a similar history, submitted to *brisement forc * on two or three occasions, suffering most intensely after every operation, and finally abandoned all treatment in 1899.

Several could be added to these of like results. I could present the notes of six or eight, where superheated air has been employed for weeks at a time without any benefit whatever. On the other hand, I could present a few where a little benefit has followed closely upon this method of treatment, but where the results have not been permanent.

Interesting from a diagnostic point may be presented notes of a lady about thirty years old, whose mother is a patient of mine at present, and suffers from typical chronic articular rheumatism, with recurring synovitis. This lady, five years ago, dating from October, 1899, while bathing, was conscious of a strain in her left knee; she was lame for a day or two, but rubbing seemed to bring relief, and she was quite well for three or four months. From that time to the present, however, she has been lame, especially after the ordinary use of the limb. If, for instance, she walks four or five blocks she is quite lame and drags her leg a good deal. On one or two occasions she has had pain in her elbows and the other knee has been affected. On my examination I found a marked crepitation as she flexed the knee, like that of rice bodies rolling over each other. This condition existed in the other knee as well, but not to so marked an extent. The comparative measurements were practically the same. As I forcibly extended the right knee, the unaffected one, she was able to hold the leg extended quite steadily. This procedure in the left limb showed marked loss of power in the quadriceps femoris, while the flexors on one side were quite as strong as those on the other. Under the use of an

apparatus she was able to walk longer distances, but she was never willing to admit that the relief was satisfactory. The potassium iodide was not borne well by the stomach, while massage and active exercises gave only a moderate amount of relief. In the latter part of 1900 she married, moved to Boston, and in the early part of 1901 consulted Dr. Goldtwaihe, who wrote me in response to a letter that Mrs. — “ had lateral sclerosis, which is manifest by the spastic condition of the muscles below the knee on the left side. This gives her a peculiar gait ;” and it was because of this that she came to him. After examining her and feeling that this was probably the trouble, he referred her to Dr. Walton, one of Boston’s best neurologists, and the diagnosis was confirmed by him. I am free to confess that this was quite a surprise, because I am unable to account for the other joint lesions on the hypothesis of a sclerosis of the lateral column on one side of the cord.

I am unwilling to dismiss this branch of the subject without a reference to gonorrhoeal rheumatism, which can be made out usually from the history of the case, and which presents really signs not differing materially from those found in the other forms of rheumatism. A man thirty-seven years old came under my observation in May, 1897. Following a gonorrhoeal attack about a year previously, he had pains in his wrists, in his hands a week or two later, and in his lower limbs two weeks subsequently ; he was taken to the Hot Springs of Arkansas on a stretcher ; was fed on the potassium iodide and took 35 baths ; was relieved of pain but the stiffness remained. After a course of treatment with the hot air and active and passive movements, there was a little increase in the range of motion, but when I saw him last, in August of that year, he was able to walk about with as little difficulty as a small range of motion in the knees would permit.

As illustrating surgical procedures in a case of gonorrhoeal rheumatism, I beg to present some notes of a case that interested me very much. A gentleman twenty-five years old, in April, 1900, was referred to me by Dr. Cabot, of Boston ; the letter he sent was that the patient had had a very long siege of trouble in the knees originally started by a urethral infection, and both knees swelled up and became chronically enlarged with fluid. A colleague had, on two occasions, aspirated both knees under ether, and had washed them out with strong antiseptics ; the operations were reported to have no good result. Dr. Cabot did the same

thing through a trocar, washing both knees with a 1-20 solution of carbolic acid. This worked a cure in the right knee, but in the left the fluid reaccumulated in spite of all that could be done ; some time later he opened the knee joint, swabbed it out and removed some fibrinous lymph, and washed it out again with a 1-20 solution of carbolic acid. The joint cavity was much smaller after this operation, but still contained fluid. He reopened the knee and again wiped it out very carefully and washed it as before. At this operation there was a sort of projecting ridge of bone and cartilage around the edge of the articulating cartilage of the femur. When the leg was straightened this ridge was shut in under the articulation of the tibia. This ridge was carefully trimmed off with a chisel leaving a smooth surface. The Doctor further stated that dry heat was applied to the knee for a long time, in the hope of bringing the inflammation to a standstill but without effect.

During the past two years I have had this gentleman under observation, wearing a splint with a strapping to the parts, under my instructions. In October, 1900, after a game of golf, and while at dinner, his knee became stiff, and he was unable to straighten it. He consulted me the next day, and I succeeded in reducing what seemed to be a semilunar cartilage. He has had no recurrence of this, and at present writing goes most of the time without his brace, and has very nearly the full range of motion in his knee.

The paper, gentlemen, has already exceeded the limits intended, and I shall be obliged to forego the discussion of the semilunar cartilage, notes of which are sufficiently abundant to make an extended paper of itself. I shall be obliged to omit a discussion of neurosis of the knee, a very tempting phase of this subject, and one that can be classed among the more common lesions of the joint.

Bursitis, sub- and pre-patellary, offers a fruitful topic for discussion, as well as slipping, or sub-luxated patella. I had also prepared notes on miscellaneous lesions about the joint ; had intended to pass in brief review sarcomata involving the joint, but I must desist for fear of abusing the courtesy so kindly extended.

If this disjointed paper will assist one in recognizing the common rheumatic affections of the knee, and in differentiating these from the graver forms of knee-joint diseases, I shall feel in a

measure satisfied. If it will assist you in managing the ordinary peri-articular lesions, in recognizing the time when rest and protection should be employed, and in determining when motion is best for the knee, I shall again feel that the evening has not been spent in vain, but I do regret my inability to present some points on the semilunar cartilage. This little body is so easily displaced, is productive of so much harm to the knee, and, when its proper status is recognized, is so easy of management, that I trust that I shall have an opportunity on another occasion of presenting this phase of the subject.

DISCUSSION.

Dr. J. Ford Thompson said that he had been impressed by the good results which Dr. Gibney had obtained from conservative treatment. Tuberculosis was the most interesting and most common of all the affections of the knee joint, especially in children. He was accustomed to rely upon fixation with plaster of paris, and other conservative measures, until he became convinced that nothing more could be expected from them; then he performed erosion of the joint. In his experience, most cases required an operation, sooner or later. It was true that ankylosis was the rule, but this was better than the prolonged wasting from the tubercular disease. Some surgeons added to fixation the injection of iodoform into and around the joint; this had been disappointing in his hands. He commended fixation with an elastic bandage; in most cases it was more useful than a plaster dressing.

He had had no bad results from simple injuries to the joint. He related a case of "bicycle knee" which was very obstinate, but which eventually terminated favorably under conservative treatment. He also related a case of suppurative disease of the joint in which an abscess extended up to the hip, and had been overlooked. He treated it by operation and fixation. Later, the knee became bent at nearly a right angle, and it was necessary to take out a wedge-shaped piece of bone in order to straighten the limb. He had met with this result several times after operation for suppurative arthritis. At the time that he straightened this woman's limb in this way but two operations of the kind had been reported in the United States. He had performed it several times since then in children.

He commended Dr. Sayre's ability and genius, but thought that most of the apparatus which he had designed was worse than useless. It had deservedly fallen into disuse. The conservative treatment recommended by Dr. Gibney was efficient in many cases, and would be in many more if all patients had the time, money and enthusiasm necessary for carrying it out; often, however, operation was unavoidable. In conclusion, he commended the paper

very highly. He believed, however, that the good results which had been obtained in New York and other northern cities could hardly be obtained with the class of patients found in the hospitals of this city.

Dr. F. R. Hagner referred to gonorrhoeal inflammation of the knee joint. He had seen Dr. Finney operate in several cases, and the results were so good that the method had favorably impressed him. The joint was washed out with bichloride solution 1 to 1,000, followed by normal salt solution, closed, and the limb put up in plaster of paris until the incision had healed; this occurred in about eight days; passive motions were then begun. Recovery had been rapid, without recurrence of pain or fluid in joint. He asked Dr. Gibney to state his opinion of this method.

Dr. Shands referred to the diagnosis in cases where the symptoms had followed slight injuries to the joint. The majority of such cases were chronic and neurotic, or they were due to displacement of the semilunar cartilages. He had obtained the apparatus necessary for giving the hot-air treatment, but was not satisfied with the results. He was glad to hear Dr. Gibney say that this had also been his experience.

Dr. Glazebrook took the opportunity to thank Dr. Gibney for a paper read ten or twelve years ago, and which had been of great benefit to him; it was on the treatment of mild injuries to the knee and ankle joints. Five or six years ago he had read a paper describing Dr. Gibney's method of strapping the knee in these cases. No other method was so effective; it was of inestimable value in the treatment of sprains, and other affections of joints. He had recently obtained good results in gouty synovitis by strapping three-fourths of the leg with adhesive strips according to Dr. Gibney's method.

Dr. James Stuart asked Dr. Gibney's opinion of the value of aspiration in obstinate cases of rheumatoid joint with effusion; it had acted well in one of his cases.

Dr. Ramsburgh inquired as to the best angle to place the knee in in putting on a plaster dressing.

Dr. Glazebrook, by request of several members, asked Dr. Gibney to describe his method of strapping the knee.

Dr. S. S. Adams asked him to explain the differential diagnosis of hysterical knee.

Dr. Gibney, in closing the discussion, said that he had been unable to say in his paper all that he desired on account of the limitations of time and space. He asked Dr. Thompson's attention to the fact that his subject included only diseases of the knee joint in adults; hence he had not considered tubercular arthritis in children.

As to the removal of a wedge-shaped section of bone to straighten a limb, he described a similar operation which had been successfully done in New York, and avoided the shorten-

ing which usually followed interference with epiphyses in children. The first operation, a transverse linear osteotomy, was done above the joint, extending through a portion of the bone; the limb was then straightened by bending at the point of section, and the angular cleft which was left when the bone incision was pulled open was allowed to fill in with new bone. At the second operation, the tibia was treated in the same way; at the end of three or four weeks, the limb was finally straightened as much as possible, under ether.

He agreed with Dr. Thompson as to temporizing, but his experience with conservative treatment had led him to use it more than most surgeons. When, however, there was any question as to diagnosis or the conditions which existed within the joint, it was best to treat the case surgically. He had long made it a practice to learn the *end-result* in as many of his cases as possible, and the knowledge gained thereby had been of great value to him.

He emphasized the importance of being able to recognize dislocation of the semilunar cartilages. This was often the result of an apparently mild injury, and was often overlooked. As regarded treatment, immediate enucleation gave the best results.

In reply to Dr. Hagner, he commended the surgical treatment of gonorrhoeal arthritis. The conditions were such that opening the joint, washing it out, and later using active and passive movements, were certainly rational measures. He was inclined to believe that this would also be the coming treatment for arthritis deformans. Immediate excision was best for tubercular knee in adults, unless the patient could afford to temporize. The angle at which the knee should be put up depended on the result expected; if ankylosis, a slight degree of flexion was best. For rheumatic knees, where the object was to secure resolution and cure, a skin-fitting plaster of paris dressing was preferable. He had employed aspiration many times. As a rule patients objected to it at first, and tact was necessary to secure their consent.

Either a rubber bandage or strips of adhesive plaster could be used for strapping the joints. The former was believed to do good by constricting the parts above and thereby favoring the flow of blood to the tissues around the knee joint, where it exerted a germicidal effect. The objections were that it was liable to cause oedema below; many patients objected to it, and it could only be left on for a limited time. In the vast majority of cases, therefore, he preferred strips of ordinary adhesive plaster. One objection to this was that if the gum was not properly prepared it was liable to irritate the skin. The method of applying the strips was as follows: Starting on the outer side of the leg below the knee, one strip was carried diagonally upward across the ligamentum patellae to a point just above the inner condyle; the second strip started at a corresponding point on the inner side of the leg below, and was carried upward and outward crossing the first so as to

make an X ; strips were then applied successively upward, each overlapping slightly the one preceding, until the front and sides of the joint were covered. Each strip was smoothed carefully with the hand ; a roller bandage was placed over all ; the dressing could be left on from one to four weeks ; it offered no obstacle to bathing.

Hysterical knee was due to a spinal lesion. There were no local objective symptoms, no atrophy of thigh or calf, no limitation to motion, etc. There might be localized tenderness at one or two points over the lower portion of the spine, but with this exception the symptoms were purely subjective. These points, together with the history, were usually sufficient for making a diagnosis.

TWO CASES OF SUBCAPSULAR HEPATIC HEMORRHAGE IN THE NEWBORN.*

BY W. C. WOODWARD, M. D. AND D. S. LAMB, A. M., M. D.

Washington, D. C.

Dr. Woodward gave a history of a colored infant, apparently healthy, which was taken suddenly ill and died when two days old. He made the necroscopy. The only lesion found was a large hemorrhage under the capsule of the upper surface of the right lobe of the liver. There was no jaundice.

Dr. Lamb showed a similar specimen ; the hemorrhage was in precisely the same place, but larger. From a colored infant which was asphyxiated at birth and revived by the Schultze method, breathing fairly well in about 20 minutes, and continuing to do so for 34 hours, when it gasped, became cyanosed and died. The labor was natural. Dr. Lamb made the necroscopy. The infant was well formed, and there were no external signs of note. The lungs were pale and there were a few subpleural hemorrhages. Some dark blood in the abdomen. The stomach contained some mucus and clotted milk. Liver as described. Other organs normal. Dr. Lamb said that most authors attributed such hemorrhages to traumatism, and this was the probable cause of the hemorrhages in both Dr. Woodward's case and his own.

DISCUSSION.

Dr. T. C. Smith said that usually when this accident occurred in the newborn it proved fatal. He recalled the case of a child 5

*Reported with specimens to the Medical Society of the District of Columbia, February 12, 1902.

days old, deeply jaundiced, who had convulsions and hematemesis, and died in a few hours. Dr. Woodward had said that his patient was not jaundiced. A moderate degree of jaundice in the newborn was not especially significant; but when it was deep, a fatal hemorrhage was to be feared.

Dr. William Ward suggested that the term "spontaneous" or "cachectic" hemorrhage be used in cases where there was no history of trauma.

Dr. Wood suggested that ligation of the cord might affect the circulation so as to bring about a hemorrhage.

Dr. Bovée inquired whether subcapsular hemorrhages occurred elsewhere in the newborn; if not, Dr. Wood's suggestion appeared to be a good one.

Dr. Woodward could not see how ligation of the cord could produce this accident; the cords of all children were ligated, but there were very few such hemorrhages. The cause was not known. It was not due entirely to compression at birth, although it more often followed tedious labors. Cerebral hemorrhage was the most frequent form of hemorrhage in the newborn; but hemorrhages had also been noted in the kidneys, suprarenal capsules, and other parts.

Dr. Lamb said that he had seen a hemorrhage like this in the scrotum. The bleeding usually came from a small peripheral vessel.

SKIAGRAPHS OF FRACTURE OF BOTH BONES OF LEFT LEG.*

By C. W. FRANZONI, M. D., B. P.,

Washington, D. C.

W. L. B., age 28, fell while skating, January 14, 1902, causing fracture of both bones of left leg, about junction of middle and lower thirds. Within an hour or two the fracture was placed in a plaster cast, and on the following morning the X-ray was used anteriorly, showing the bones in the correct position. At the end of three weeks, and before removing the dressing, the X-ray was again used, but in different planes from the original, and marked displacement was noted, although union was firm. There is very slight shortening, and the functions of the limb are gradually being restored. The case exhibited the importance of more than one skiagraphic view to determine displacement.

* Shown to the Medical Society of the District of Columbia, Feb. 12, 1902.

DISCUSSION.

Dr. Borden said that there were three interesting points about the pictures. 1. The apparent non-displacement of the fragments. One should remember, however, that skiagraphs are shadow pictures, and more than one view was necessary to give a correct impression of the object. 2. The apparent absence of callus. It did not indicate, however, that callus was not present, for it would not show in the picture for several weeks after union of the bones: new bone was very transparent. 3. The skiagraphs illustrated the difficulty of taking a picture through a plaster cast: the cast should, if possible, first be removed.

Dr. Bishop suggested the advisability of first making a fluoroscopic examination.

Dr. Franzoni said he would take additional skiagraphs of the fracture from different positions, and present them at the next meeting.

CASE OF RUPTURED TUBAL PREGNANCY.*

By J. W. BOVÉE, M. D.,

Washington, D. C.

A colored girl, age 20, had excellent health with menses regular until about January 1, 1902, when the menses were again due; but she was caught in the rain and took cold. Three days later she had severe hypogastric pains, which continued irregularly until her admission to Columbia Hospital, February 6, 1902. The last period, January 29, was delayed a few days and has continued to the present time.

A few days after admission Dr. Bovée was asked to see her, and made a diagnosis of ruptured tubal pregnancy; as soon as her consent could be secured an operation was done, namely, on the 12th. The size of the mass noticed when she was being prepared was considerably greater than when the diagnosis was made. On opening the abdomen through a median line incision much free, fresh, fluid blood was noticed. The intestine and omentum were adherent to the top and back of the uterus, to the right appendage and to the top of the left broad ligament. When these were separated, about a quart of fresh, fluid blood, and a fetus of fully three months' development, escaped from the retro-uterine peritoneal fossa. Below these were masses of dark coagulated blood,

*Reported with specimen to the Medical Society of the District of Columbia, February 12, 1902.

and a large left tube ruptured longitudinally throughout its length except the half-inch nearest the uterus. The ovary was not badly diseased, but intimately adherent. The right tube formed a part of the fetal sac, and had an appearance of having been ruptured; a careful examination, however, proved this incorrect. The ovary was badly degenerated, and, with the tube, adherent.

Both appendages were removed. As the pulse was feeble before the operation began, 1,000 cc. of salt solution at 115 F., were administered by hypodermoclysis. A thermometer was employed that registered the temperature of the solution two inches from the needle, and which he had devised and employs for accuracy in using salt solution. The cavity was carefully cleansed, and 1,500 cc. of salt solution at the same temperature were poured into it and left there. The wound was rapidly closed by the completely buried tier suture. She was sent to bed with a small and very rapid pulse, and was immediately given an enema of 1,000 cc. of salt solution at a temperature of 120 F., containing whisky and carbonate of ammonia, and began to improve. [She had made an excellent recovery February 21, 1902.]

These cases often come in groups. Last week he had operated on a condition, new to him, and so far as he knew, new to medical literature, "threatened tubal abortion," in which the unruptured tube contained a small fetus and other conception products, while the enlarged fimbriated and patulous end was connected with a large mass of thick blood surrounded by a thin pseudo-sac. Then came this case, and a physician had this evening asked him to operate on another case of extra-uterine pregnancy.

This specimen, fresh and free from preservatives, showed distinctly the fetus, ruptured tube, meddling right tube and decidua reflexa.

CASE OF STRICTURE OF OESOPHAGUS; GASTROSTOMY.*

By J. FORD THOMPSON, M. D.,
Washington, D. C.

In August, 1900, a colored boy, aged 2 years and 9 months, swallowed an unknown quantity of concentrated lye; at varying intervals afterwards he was unable to retain food; after October

* Reported with specimen to the Medical Society of the District of Columbia, Feb. 19, 1902.

19 he regurgitated all food, solid and liquid, vomiting it about one minute after swallowing. Admitted to Children's Hospital, Washington, October 26. Complained of pain in chest and had a slight bronchial cough; emaciation extreme; skin pale and waxy (normally a very light mulatto), cervical glands slightly enlarged; a constant serous nasal discharge; voice weak and high pitched; a few moist rales throughout both lungs; irregular cough; pulse weak and rapid; peripheral circulation poor, temperature 98 F.; tongue coated and pale; excessive flow of saliva constantly dribbling from mouth; constant and complete regurgitation of all solids and liquids taken by mouth, in from one-half to one minute after swallowing. It was impossible to pass bougie, an obstruction seemingly existing at about middle of oesophagus; the regurgitant matter at times consisted of a large quantity of blood-stained mucus, independent of food. Intestinal digestion good; constipation. Physical examination negative. Slept very poorly, restless and fretful; sensation and motion unimpaired; passed urine voluntarily and in sufficient quantity; urinalysis negative.

The child was almost moribund and food and stimulants were given by rectum. Nov. 4 Dr. Thompson did a gastrostomy and inserted tube; no reactionary temperature; a perfect fistula resulted; the child was fed through the tube and its condition began at once to improve; in sixteen weeks he was able to get up and be wheeled around in a chair. During the spring and summer of 1901 frequent attempts were made to pass bougie and dilate stricture both from above and below without success. The tube was taken out only to be cleaned; regurgitation still occurred when any effort was made to retain food by mouth. He was finally able to walk. Temperature usually subnormal; slight elevations during two attacks of bronchitis. October 29, 1901, the X-ray was used but failed to locate the lesion; bougie passed from below, bulb seen at about second rib. The child was becoming languid and dull. December 18 suffered much discomfort; mucous discharge from mouth and nose; severe deep-seated cough. December 20 he began to vomit altered blood, was very weak and prostrated and died on that day. Temperature slightly elevated.

The necropsy, by Dr. T. S. D. Grasty, showed the following: The oesophagus for 2½ inches above the stomach showed much firm thickening of wall, with muscular hypertrophy, ulcerated mucous membrane and lumen much narrowed. Above the strict-

ure, the tube was dilated and pouched. Wall of stomach thickened; mucous membrane in places emphysematous. In anterior wall nearly midway between cardiac and pyloric orifices was a small oval opening communicating externally; around this opening the stomach was firmly adherent to abdominal wall. Lungs oedematous; other organs negative.

DISCUSSION.

Dr. F. A. R. Jung said: One new method of treatment of stricture of the oesophagus is electrolysis; 7-10 milliampères are used. Slaton says that electrolysis is a painless, harmless and aseptic form of treatment because the mild current works without causing bleeding. In carcinoma of the oesophagus, electrolysis is palliative and facilitates deglutition.

The usual methods of treatment are the introduction of Schreiber's dilatation sounds, laminaria tents, simple sounds, retrograde sounds, or silver balls on silk threads. Rosenheim avoids sounding of the oesophagus in cases of carcinoma, as long as fluids can be swallowed. Krönig recommends the injection of 30 cc. of warm oil previous to the introduction of Nèlaton's catheter. Then he washes out the patient in the horizontal position. Boas has constructed an apparatus to free the oesophagus from mucus in cases of chronic inflammation following lye poisoning, etc. The apparatus consists of two tubes, one inside the other. The inner tube has at its end a condom which is inflated, thus closing the oesophagus below while the upper portion can be washed out by means of the outer tube, without any fluid running into the stomach.

Dr. Balloch said the specimen was interesting because strictures caused by the ingestion of lye were rarely situated so near the cardia; they were usually located farther up. The treatment was generally unsatisfactory, and Dr. Thompson was to be congratulated upon his result in this case. When the stricture was long, and very small, it was practically impossible to get an instrument through, and operative interference was necessary. Electrolysis had not proved as successful as was hoped.

ANAESTHESIA WITH COMBINED NITROUS OXIDE AND ETHER.*

By EDWIN M. HASBROUCK, M. D.,

Washington, D. C.;

I desire to bring to the attention of the Society a comparatively new method of producing anaesthesia, and the apparatus used.

*Read before the Medical Society of the District of Columbia, March 5, 1902.

The method is known as the combined nitrous oxide and ether, and possesses many advantages over the old way of administering ether. The apparatus is one devised by Dr. Goldan, of New York City, and, while complicated in appearance, is really simple. The one I show belongs to Dr. Fry, in whose sanitorium we have been using it for some six months with the greatest satisfaction. I will first describe the apparatus.

It consists of a celluloid mouthpiece faced with a pneumatic rubber cushion capable of inflation. The celluloid composition permits the anaesthetizer to watch the lips without moving the apparatus. On the mouthpiece fits the ether chamber containing a valve, and an apparatus for pouring in the ether. This apparatus is stopped with a gutta percha cork containing a small glass globe, into which the ether runs when the apparatus is tilted and shows whether or not the chamber still contains ether. These parts are always together. There is a detachable neckpiece that fits on to the ether chamber, containing an inspiratory and an expiratory valve, also a cut-off valve to work with the thumb. To this is attached when starting, a gas bag connected by a rubber tube to the small cylinder of gas. These cylinders are very small, being 12 to 14 inches long, and contain 100 gallons of compressed nitrous oxide gas, and are obtainable at any dental supply depot. There is also a detachable air bag similar to the Clover inhaler, also having a valve.

In starting an anaesthesia we proceed as follows: The mouthpiece, ether chamber, neck piece with valve, gas bag and gas tank being connected, the ether chamber and the valve closed, the apparatus is placed over the patient's mouth and nose. The gas is now turned into the bag and the valves in the "neck" are brought into play by pushing the thumb piece forward; this allows the gas to be breathed in by the inspiratory valve and breathed out by the expiratory valve. A push upward on the thumb piece, after a few seconds, throws both valves out of action, and the patient breathes back and forth into the gas bag. In about 40 seconds the valve in the ether chamber is opened one "point," in a few seconds to a second point, and then to a third, and finally to the fourth, when the patient is breathing mixed pure gas and pure ether. In from $2\frac{1}{2}$ to 4 minutes the gas bag and neck are detached, the air bag substituted, and the patient is ready for the knife. If at any time during the administration of the anaesthetic

fresh air is desired, the valve in the neck of the air bag is opened and the air is admitted directly to the patient without removing the mouthpiece from the face.

The advantages I find in this apparatus are : *First*. The rapidity of producing complete surgical anaesthesia. *Second*. The small amount of ether used during an operation. *Third*. It eliminates entirely the period of excitement, struggling, coughing and strangulation. *Fourth*. It permits of so gauging the amount of ether that the patient is constantly just within the limits of anaesthesia and comes out very rapidly and quietly on its removal. *Fifth*. The after effects are much less.

Taking these up seriatim.—*Rapidity* : I have been using this apparatus exclusively since early last autumn, and am always able to produce complete anaesthesia in from $2\frac{1}{2}$ to 4 minutes. The general average is $3\frac{1}{2}$ minutes. I gave it the other day in two minutes and fifty seconds ; and again (continued) in an estimated case, in $2\frac{1}{2}$ minutes. During the administration of the gas there is often a cyanosis of greater or less intensity ; it passes off at once on admitting a breath or two of air. *Second*, amount of ether used. Three ounces of ether will carry a patient through an ordinary operation if not too much time is taken in performing it. I have frequently carried through an operation for lacerated cervix, curetting and perineorrhaphy, all at one sitting, on that amount ; again four ounces will be required. Eight ounces carried a breast amputation through a three hours' operation (timed), including the amount required to produce anaesthesia. This is quite a gain when the old way is considered, when it frequently took a half-hour to get the patient under, and when nearly 250 grammes of ether were used. *Third*, elimination of period of excitement, etc. There is no such phenomenon present—the patient is completely under the influence of gas in about thirty or forty seconds—possibly a minute ; the ether is turned on a little at a time, and the two are inhaled together. As soon as anaesthesia is complete the gas is turned off and the patient is ready. *Fourth*, gauging amount of ether throughout. When properly used, the patient is just within the limits of anaesthesia throughout the operation, and most generally is “coming out” before leaving the table. *Fifth*, after effects. In a large number of my cases there has been no vomiting, in some there has been just a little vomiting when first beginning to come out, but has been neither much nor

long continued, and there has been no repetition of it; while in some cases I can see no difference in this feature of the two methods. As a whole, however, the vomiting seems much less than by the old method. One effect, however, is experienced more often by this method than by the other, and that is headache. Some patients complain of a slight headache after recovery, but it amounts to little and is scarcely worthy of notice.

[Dr. Hasbrouck then anaesthetised a man whom he had brought for the purpose. As he was a drinking man, and was but recently over a spree, he was not the best subject. It took 4½ minutes, as timed by Dr. French, who kindly assisted; but even that was a very short time, and in alcoholics the period of excitement is usually very long. In the present case it was entirely absent.]

DISCUSSION.

Dr. Bryan said that surgeons were especially interested in new suggestions concerning anaesthesia and anaesthetics in view of the delays, danger, unpleasant effects, and other disadvantages which often attend the methods now in use. The method demonstrated by Dr. Hasbrouck seemed to constitute a decided advance, and it was strange that it had not been employed in this city before; it had been used in New York, Philadelphia, and a few other cities for several years. At a recent demonstration in New York anaesthesia was produced in 2 minutes; only half an ounce of ether was used. The method appeared to be safe. It was certainly more pleasant for the patient and physician. It was likely to prove of especial value in operations upon the throat.

There was need in this city of a professional anaesthetist, a physician who would devote his time exclusively to this specialty. The method used in most hospitals was unsatisfactory; it was customary for the junior interne to give the anaesthetic, but he often lacked the experience and judgment which were necessary for the proper performance of such an important duty.

Dr. Reyburn thought that the method had a great future before it. It was not new here. Dr. Howland, a dentist, demonstrated it in this city six or seven years ago. It was safer, quicker and pleasanter than the present methods of producing anaesthesia. Anaesthetics were often given rashly. Of late he had been using chloroform, but it was a treacherous agent. He had never had a death from it, but had witnessed one.

Dr. S. S. Adams said that his attention had just been called by Dr. Grasty to a suggestion by a member of the staff of Bellevue Hospital, New York, that the administration of iced water before beginning the anaesthetic would in many cases prevent nausea. The same author had stated the advantages of nitrous oxide as

the primary anaesthetic, followed by ether, and had reported several cases in which anaesthesia had been thus produced in 20 to 35 minutes.

Dr. Bryan asked Dr. Hasbrouck whether he had noted any unpleasant effects from the administration of nitrous oxide and ether in the manner demonstrated.

Dr. Vaughan said that he had seen the method used in London in 1899; anaesthesia was produced in two minutes. It appeared to be useful, but had still to stand the test of further trial. Surgeons in London were somewhat fearful of the increased arterial tension which it caused; one death from this cause had already been reported at that time. It was undoubtedly superior to other methods so far as the surgeon was concerned; but was it better for the patient? This was so if the claims made for it were true. He questioned whether the usual quantity of ether would not be required in long operations. The complicated apparatus was also a disadvantage unless the services of a professional anaesthetist could be secured. He agreed with Dr. Reyburn that anaesthetics were often given recklessly. He would not care to commit himself now as to the value of the method, but thought that it deserved further trial.

Dr. A. F. A. King asked whether the apparatus could be kept aseptic, and was answered in the affirmative.

TWO PECULIAR COMPLICATIONS OF LABOR; SHORT AND LONG CORDS.*

By GEO. W. WOOD, M. D.,

Washington, D. C.

The first of these occurred in a primipara. An examination not long before confinement showed a large, roomy pelvis and a normal presentation of the head. The woman had always been strong and healthy, so a natural labor was expected. Everything went on very nicely until the head presented at the perinaeum, when for some unknown reason all advance ceased. The labor pains were strong, in fact, at times violent; the head was freely movable and all the parts relaxed; the perinaeum was unusually elastic and no cause for the stoppage could be found.

This condition persisted for nearly two hours, the mother meanwhile making a peculiar plaintive cry during the pains and complaining of a faint sickening feeling, but not of exhaustion. Sud-

*Read before the Medical Society of the District of Columbia March 12, 1902.

denly during one of these pains the head emerged, instantly followed by the shoulders, and delivery was rapidly completed. The baby did not cry. As the body emerged a mass of intestines was found protruding from the abdomen at the umbilicus. The cord was clamped and cut. There was a longitudinal tear in the abdomen about one and a half inch long, extending above and below the umbilicus. The baby became rapidly cyanotic and all signs of life ceased.

The placenta was expelled almost immediately, and showed a very thick and strong cord but only eight inches long—evidently too short to permit the normal delivery of the baby. Its shortness was probably also the cause of the ventral rupture, as during the later months of fetal life there must have been a more or less constant traction exerted at the umbilicus, causing a thinning of the tissues at this point. My reasons for thinking this accident occurred during labor are: That the baby was pink and healthy-looking at the time its head emerged. The intestines were of normal hue at birth, but rapidly turned dark and were easily replaced within the abdomen. The edges of the opening were inverted and blood-stained, and slightly ragged as if freshly torn. The skin around the umbilicus seemed unusually thin, and was probably torn by the lateral tension of the cord during rotation of the body in delivery, as the cord was stretched around the baby's right side and over the back of the right thigh.

Had there existed a congenital abdominal opening the edges would not have had the appearance of being torn. Had the intestines protruded during fetal life the abdomen would probably have been shrunk and the intestines could not have been replaced within the cavity. The baby was a female and weighed 8 pounds.

The second case occurred in a woman who had rather an interesting history, aside from her last pregnancy. Her first three children are alive and healthy, but during the past twelve years she has had 11 pregnancies and in all, excepting the last, has regularly miscarried between $5\frac{1}{2}$ and $6\frac{1}{2}$ months. Her first miscarriage followed a "hard day's work." No history of syphilis could be obtained, and I have no reason to suspect that it ever existed.

She was torn during one of her full-term labors both the perinaeum and uterus being lacerated. The uterus, when not preg-

nant, was always large and boggy and somewhat prolapsed, the vaginal walls sagged and all the parts lacked tone. In her last pregnancy she was seen about the sixth month. She was bleeding a good deal, but had no pains. There was no dilatation of the cervix and the placenta could not be felt. Every one, of course, expected the usual result, but as an experiment she was given "Viburnum Compound" and put to bed. To the surprise of all, the flow ceased, and with care she went to full term. Her last labor occurred a few days ago. Everything went well until the baby's head was visible. It was a very small head, freely movable, and with room all around it as far up as the fingers could reach. During some pains the head advanced a little, in some it receded, while in others both phenomena occurred.

Feeling sure that something retarded the advancement, after waiting over two hours, I succeeded in persuading the woman to let me apply forceps. The pains which were never strong, meanwhile became feebler. The forceps were easily put on and without an anaesthetic. Slight traction during two or three pains delivered the head. As it emerged the right hand appeared lying close against the neck, partly concealing the right ear. When the shoulders appeared it was found that the hand was firmly bound in that position by two coils of the cord passing tightly around the baby's neck and over the right wrist, making it impossible for the hand to have been forced from its abnormal position during labor.

The child was nearly dead but artificial respiration was successfully resorted to. It weighed $5\frac{1}{2}$ pounds, but was poorly nourished, quite jaundiced and very feeble. The eyes bulged somewhat and the pupils were widely dilated. At regularly recurring intervals of about 1 minute, it gave a peculiar cry. The vernix caseosa was almost like putty and could be detached from the body in large flakes. No bag of waters formed during labor and no amniotic fluid followed the delivery. The mother said that all her labors were dry, and the child's appearance indicated that there could have been very little, if any, fluid in the uterus for some time preceding its birth. The baby lived only 3 hours.

The complication in this case was evidently due to too long a cord, for it was over 40 inches in length and very little larger than a lead pencil. It would be interesting to know what part the length of the cord plays in the vitality of infants. It would seem

not irrational to suppose that a fetus situated 40 inches from the placenta could not obtain its nourishment with the same expenditure of energy as if it were only half as far away. Certainly a long cord has more chances of becoming entangled with itself or the fetus and more points of pressure, besides needing a more powerful heart to pump the same amount of blood through its vessels.

DISCUSSION.

Dr. T. C. Smith asked Dr. Wood whether he had noticed any evidence of traction upon the uterus in the first case which he had related. It had been noted in a number of short-cord cases that the uterus was markedly depressed by the traction exerted through the cord. Drs. A. F. A. King and Toner had reported cases of this kind. Dr. Toner had said that he had delivered women when the cord was so short that the abdomen of the child was close to the vulva and it was almost impossible to ligate the cord. The peculiar drawing sensation around the navel of the mother had some diagnostic value.

Dr. Wood replied that he had not noted this symptom, but it might have been overlooked on account of the rapidity with which the delivery was effected.

Dr. W. S. Bowen congratulated Dr. Wood on the outcome of the cases. They were both interesting. He had never seen an instance in which the cord was so short as to cause rupture. The opposite peculiarity, too long a cord, was more often observed. He remembered one which was reported by Dr. A. F. A. King; also, one by Dr. Cook in which there was no cord at all.

Dr. E. F. King said that he recollected the discussion upon the case last mentioned, and also Dr. King's recommendation that the woman in such a case be placed on her hands and knees so as to relax the tension upon the cord as much as possible. He had found the suggestion very helpful.

Dr. A. Behrend said that cases of long cord were comparatively common. He recalled one instance in which the funis was slipped around the child's neck in such a way as to cause death.

The *St. Paul Medical and Surgical Journal*, now in its fourth volume, is a monthly of 78 pages, subscription price \$2.50 a year in advance. Published by the Ramsey County Medical Society, Minnesota. This Society holds monthly meetings at St. Paul. The receipts from the *Journal* are said to have sufficed to collect a library of nearly 4,000 volumes. The Society operates a clinical laboratory, and is said to have made a profit on the sale of catgut.

CASE OF COMPLETE TRANSPOSITION OF VISCERA.*

BY I. W. BLACKBURN, M. D.,

Government Hospital for the Insane, Washington, D. C.

The specimen of complete transposition of the viscera which I have brought before you this evening is of comparative rarity, though quite a number of cases of the condition have been reported. Some of these have not been confirmed by post-mortem examination, some have been incomplete, and some rest upon clinical evidence more or less conclusive. Cases of complete transposition, however, are found occasionally in autopsies, without having been discovered during the life of the individual, and of course many more may exist than we suspect. 'This' case was not discovered during the life of the patient, as during his long residence in the hospital he had not suffered from any physical disease necessitating a complete physical examination, until the last illness came on; and at the time of his admission a routine physical examination was not required as it is at present.

The patient was admitted in 1890, and had remained in fair physical health until an attack of acute pleuritis ended his life. By a strange coincidence the pleuritis developed on the left side, so that had a complete examination been deemed advisable, the displacement of the heart would possibly have been attributed to the presence of pleuritic fluid. The patient was very weak, and though the pleuritic dullness was discovered, a more thorough examination was not made, and death occurred unexpectedly on the fourth day after the discovery of the disease.

We have, then, no clinical, or ante-mortem evidence of the existence of the abnormal position of the organs, and the case becomes of chief interest to the embryologist, the anatomist and the morbid anatomist. We shall be indebted to Drs. Baker and Lamb for the discussion of the embryological and anatomical relations of such cases, and I shall only detain you with the notes of the autopsy.

A word, however, as to the preservation of the specimen. It was only possible by the use of a 4 per cent. solution of formalin. The vascular system and the alimentary canal were thoroughly washed by passing a stream of water through until it ran clear;

*Reported with specimen to the Medical Society of the District of Columbia March 12, 1902.

the blood-vessels, alimentary canal and the lungs were then filled with the formalin solution and the specimen was immersed in the same. Kaiserling's fluid would have preserved the colors better, but I feared that so large a specimen would not keep in it.

The photographs were taken with the aid of a vertical camera, with the specimen beneath the fluid to avoid glistening. One of the pictures was printed from the *reverse* side of the negative; this brings the organs into their normal position. I was obliged to remove the small intestine to show better the transposition of the duodenum, and divisions of the colon.

J. F., age 71; male; colored; nativity, Virginia. Had had chronic melancholia twelve years. Had become much demented from the progress of the disease and senile changes. Had paralysis of the lips, of unknown origin; and the lower lip was elongated and hung down, exposing the lower teeth. He was unable to masticate or retain his food without the aid of his hands. There were no other evidences of paralysis, and his general health had been fairly good for years. On the morning of Sept. 22, 1901, he had a slight chill, followed by rise of temperature to 99 F.; respiration, 26 per minute; pulse, rapid; had a slight dry cough, and some difficulty in breathing. Sept. 25, was very weak and the bronchi seemed to be filled with secretion which he could not expel. Dullness had developed on the left side, and the diagnosis of pleuritis was made, but the patient was so extremely weak that thorough examination was not deemed advisable. He grew rapidly worse and died the next morning.

Autopsy six hours after death. Body slender and much emaciated; lower lip elongated and pendulous; no external signs of disease of viscera.

Antero-posterior diameter of skull, $7\frac{3}{8}$ inches; transverse, $5\frac{1}{2}$ inches. Shape of skull, symmetrical; thickness about normal for one of his race. Evidences of an old fracture on the right side of the skull about the middle of the coronal suture. A shallow depression existed in the external table, and an elevation somewhat larger in the inner plate. The dura mater was generally adherent to the bone, but somewhat more firmly over the seat of the fracture. The brain showed no signs of injury beneath the elevated portion of the bone, and there were no adhesions to the leptomeninges.

Weight of brain, 1,120 grams. Convolutions considerably

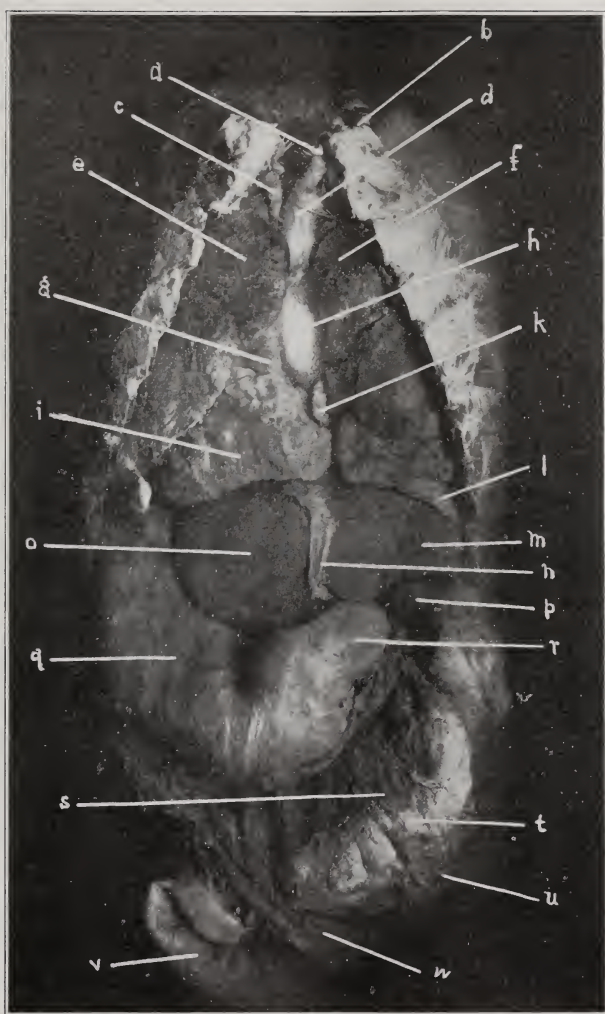
shrunk over the whole brain. Pia-arachnoid oedematous but otherwise normal. The arteries at the base showed some patches of atheroma; they were normal in development. There was nothing in the brain to aid in determining transposition of the hemispheres. It is probable that no reversal of the halves of the brain existed, as the neural canal and its contents develop from a different layer of the blastoderm.

Left pleural cavity filled with serous fluid with light shreds of lymph over the visceral pleura and some congestion, indicating acute pleuritis. The quantity was about 1,650 cc. and it was at first thought that the heart was displaced by it; the lung was pressed to the right and slightly collapsed. Inspection showed the case to be one of *complete transposition of the viscera*, which indeed might be described by saying that the position of the organs was an exact *negative* of the normal.

The heart was exactly reversed, and bearing the same relative position to the sternum and right side that it normally bears to the left. The organ had the usual inclination from the vertical line and the normal relation to the diaphragm, but on the right side of the median line. The cardiac notch in the right lung left about the proper heart-area exposed. The organ could not be completely examined without spoiling the specimen, but the venae cavae and pulmonary veins entered their respective auricles as usual, though on the opposite side to the normal, and it may be presumed that the parts in the interior are correspondingly reversed.

The aorta and great arteries of the arch were completely reversed, the arch curving over toward the right, and the innominate, common carotid, and right subclavian, coming off in proper order. The innominate artery divided as usual into the common carotid and subclavian, and these and the other great vessels seemed to be distributed as usual. The pulmonary artery had its proper relation to the heart and aorta, and branched as usual. The other branches of the thoracic aorta and the azygos veins could not be examined.

The reversal of the bilateral organs was, of course, hard to determine. The cardiac notch was on the right side, and the lung on this side had two lobes, while that on the left side showed indications of three. Even considering the normal variation in



TRANSPOSITION OF VISCERA.—Terms transposed in description: (*a*) Right common carotid artery; (*b*) innominate vein; (*c*) left common carotid artery; (*d*) innominate artery; (*e*) left lung [?]; (*f*) right lung [?]; (*g*) pulmonary artery; (*h*) aorta; (*i*) right ventricle of heart; (*k*) appendix of right auricle; (*l*) diaphragm; (*m*) right lobe of liver; (*n*) suspensory ligament of liver; (*o*) left lobe of liver; (*p*) gall bladder; (*q*) cardiac end of stomach and situation of spleen; (*r*) pyloric end of stomach; (*s*) gastrocolic omentum; (*t*) transverse colon dragged downward; (*u*) situation of coecum; (*v*) sigmoid flexure; (*w*) omentum. I. W. BLACKBURN, M.D.

the number of lobes, this is perhaps sufficient indication that the lungs were transposed.

There was a general elongation of the mesenteric attachments and a considerable degree of enteroptosis especially noticeable in the transverse colon.

The liver lay in the left hypochondrium, completely transposed. The lobes were reversed, but the one corresponding to the left was relatively a little larger than normal, and owing to slight downward displacement it appears in the pictures larger than its fellow, which was not actually the case. The vessels and other structures of the hepato-duodenal ligament, the vena cava, and hepatic vein were reversed. The gall-bladder had its usual relative position ; it was filled with bile. The liver showed no evidence of disease.

The pancreas lay in the usual transverse position with its head to the left and in the proper relation to the duodenum. The exact mode of entrance of the duct into the duodenum could not be determined.

The spleen lay in the right hypochondrium in its usual relation to the cardiac end of the stomach. The size and shape were normal.

The kidneys were not removed, and the details of arrangement of vessels and ureter could not be studied. They lay in their normal position and were probably transposed, though this would be difficult to demonstrate.

The stomach was exactly reversed. The oesophagus pierced the diaphragm on the right side of the spine and had its proper relation to the aorta. The organ was considerably dilated and there was marked gastroptosis.

The duodenum had the normal curves and flexures, and the usual relations to the stomach and other organs, in this case on the left side. Nothing unusual was noted in other portions of the small bowel except malposition of the mesentery and the situation of the ileocaecal valve on the left side. On account of the bulk of the small intestine obscuring the position of the colon the mesentery was cut across and the bowel removed.

The caecum, appendix, and ascending colon were on the left side ; the sigmoid or free portion in the right iliac region, and the descending colon lay in its usual position but on the right side. The gastro-colic omentum was much elongated and the transverse colon was much prolapsed. The rectum was in its proper posi-

tion. There were no evidences of disease of the large bowel except the coloptosis.

The urinary bladder and ureters were normal and nothing abnormal was noted in the genital organs.

DISCUSSION.

Dr. Frank Baker remarked that this was the special case of heterotaxia or abnormal position of organs which was technically known as *Situs inversus totalis*. Since the functions of the body are in no way affected, it does not come under the definition of monstrosities as understood by many writers.

History.—Aristotle noted a case in a cow, and others were occasionally found by the Roman augurs. The first recorded case in man appears to date from 1643. Marchand, in 1660, reported a case occurring in a malefactor who had been broken on the wheel. This created quite a sensation beyond medical circles, and gave rise to the oft-cited passage in Molière's comedy of *Le Médecin malgré Lui*, in which Sganarelle, being remonstrated with for placing the heart on the right side and the liver on the left, says that, though it was formerly supposed to be otherwise, "*nous avons changé tout cela.*" In 1836, Geoffroy St. Hilaire collated 60 cases; Gruber, in 1888, increased the number to 149; Pic, in 1895, to 190. In the Library of the Surgeon General's Office there are recorded at least 300 cases and a few are added to this number every year.

Characters.—The organs appear to be perfectly healthy, but their shapes and relations are so transposed that they appear as would the image of the normal organs if viewed in a mirror. The transposition is usually discovered by accident or upon the dissecting table. Left-handedness often accompanies it, but not invariably. It is said to be more frequently observed in males, and there is no evidence that it is hereditarily transmissible.

Etiology.—The causes of this peculiarity must evidently be sought in embryonic life. During the 17th and 18th centuries, when the germs of each organ were believed to be prefigured in the embryo, it was thought that some mechanical cause had intervened to displace these germs. Von Baer held that the transposition was caused by the embryo turning over upon the yolk sac in an unusual way, but gave no reason for the turning. Virchow suggested that in these cases the umbilical cord was twisted in a reverse direction to the normal, which caused the liver to grow toward the left side, but cases of transposition have been found in which the umbilical cord was found to be perfectly normal. Henle, Rindfleisch and Rokitsansky maintained that the phenomenon was essentially of vascular origin caused by an irregular division of the aortic bulb.

Förster and Wehn, noticing that in certain double monsters one of the individuals has the viscera normally placed while the other has them reversed, conceived that such twins are the product of a single ovum, which at some stage became separated like the unfolding of the leaves of a book. Further, that cases of transposition are all primitively associated with a normal twin which perished at an early stage. As nothing of the kind has ever been noted, it would appear to be necessary to seek other evidence before allowing the tenability of this theory.

Dareste and Fol adduced certain experimental evidence to show that the stimulation of one or the other side of the embryonic heart would cause a displacement of the viscera. Their embryos, however, always died before reaching maturity.

In conclusion it may be said that if the cause of this strange phenomenon remains obscure, the same is the case with the causes which regulate the normal position of the viscera. We cannot expect to satisfactorily explain one as long as we are ignorant of the other.

Dr. D. S. Lamb asked Dr. Blackburn as to the number of post mortem examinations recorded at the Government Hospital for the Insane, in which the thoracic and abdominal cavities had been examined, to which Dr. Blackburn replied "somewhat over a thousand, and this was the first case of transposition of viscera recorded." Dr. Lamb continuing, said that in somewhat over a thousand examinations of his own he had yet to find the anomaly. He saw a typical specimen in Chicago last December. As Dr. Baker had said, probably all observed cases had been recorded, since it was not given to any one man to see many. Dr. Baker had so thoroughly covered the subject that there was but little left for him (Dr. Lamb) to say. It was worthy of note that although the relative frequency in men and women was in the nature of things unsettled, Guttman's collection of 100 cases showed a proportion of $2\frac{1}{2}$ males to one female. The relative frequency of left handedness was also unsettled; but at least one case was reported in which the individual did "mirror writing." He was uncertain just how one could know that there was transposition of the brain or spinal cord, or some other parts of the body which might be named.

The subject was important to the physician, but more so to the surgeon; since the operations of colotomy, oesophagotomy, paracentesis thoracis, and operations on the liver, gall bladder, stomach or spleen, should as a rule not be undertaken unless we were certain as to the position of the organ interested, or supposed to be interested. The diagnosis of transposition had been made and could be made by auscultation and percussion, which would map out the hollow and solid organs by areas of dulness and by the sounds elicited; palpation also would indicate the position of the apex beat of the heart. Measurements also had been made.

Preliminary distension of stomach or bowel with gases or fluids would assist in locating the hollow organs. Auscultation over the spine during deglutition would tend to show the right or left deflection of the oesophagus. Palpation over the posterior aspect of the thorax would show more marked vocal fremitus on the left side if the larger (ordinarily the right) bronchus was on that side. The abdominal aorta could, of course, be felt on the right side of the spine. Inflation of the rectum and sigmoid colon would, of course, go toward the right. Palpation with percussion might show the caecum in the left iliac fossa. The X ray had also been used. One case had been reported within a few years in which the phonendoscope had been successfully used in locating the transposed organs.

Dr. Neff said he was glad that he had been able to see the specimen. He had seen instances of partial transposition, but never before one which was complete.

Dr. Blackburn, in closing, expressed his thanks to the members who had taken part in the discussion.

PROSTATIC HYPERTROPHY; CASTRATION, PROSTATECTOMY, BOTTINI. WHICH?*

By ERNEST F. KING, A. M., M. D.,

Washington, D. C.

The subject of prostatic hypertrophy and its treatment is interesting to physicians and surgeons alike, and much time could be spent with profit on topics upon which I shall barely touch in this paper. Whether the prostate is a gland or not; whether there is a middle lobe or only a middle portion, and whether hypertrophy is due to an overgrowth of fibrous, muscular or glandular tissue, or of all three, are questions upon which lengthy discussions might be held. Full of interest, too, are the simpler surgical procedures in common use, or suggested for the relief of retention of urine due to prostatic hypertrophy; for it is the urinary symptom for which we operate, as many large prostates do not affect the flow of urine and are found at necropsies of subjects with negative life histories.

It is granted that much could be said in favor of dilatation by sounds, catheterism, overstretching of the prostatic urethra, perineal or supra pubic drainage, and the use of the constant or Faradic current, all in selected cases. These methods are omitted from

*Read before the Medical Society of the District of Columbia March 19, 1902.

discussion, not because they are of no value, but because of the necessity of subdividing the general matter. Believing with the executive committee of our Society that the meetings are more interesting when a paper and its discussion can be included within the limits of a single meeting, I have condensed as much as possible and confined myself to the subject given above.

Before entering on this, however, pardon me if I refer briefly to the various methods of examining the prostate and its conditions.

The finger in the rectum determines the form, size and consistency of the gland. This examination is aided in some cases by counter pressure through the abdominal wall, and in all cases by a sound in the urethra. If a metal catheter be used and the shaft marked when the point enters the prostatic urethra, the additional length introduced before the urine flows gives the length of this portion of the urethra. The handle of a sound turning to one side or the other shows a unilateral hypertrophy. The length of the prostatic urethra may also be determined by introducing a stone searcher into the bladder, turning the point downward and holding it firmly against the prostate. Then the finger in the rectum can estimate the distance from the point of the instrument to the apex of the gland. When the obstruction permits the passage of the instrument we have in the cystoscope the means of verifying the conclusions reached by other methods, as well as determining the exact appearance of the growth about the internal urethral orifice. In some reported cases a cystoscopic examination has been made through a suprapubic puncture. By a combination of the methods named it is possible to gain exact knowledge of the condition of the prostate, from which, as done by C. Hurry Fenwick, clay models may be made to assist in mapping out lines of operation.

Having determined the existence of enlargement of one or more lobes of a prostate with resulting retention of urine, residual urine and probably cystitis, with a reduced or enlarged bladder capacity, which of the operations named in my title shall be selected for the relief of this condition? To help us to a decision permit me to give a condensed account of them.

Castration for the relief of prostatic hypertrophy and its results, recommended by Launois in 1884, was first performed in April, 1893, by Ramm, of Christiania. At the same time White, of

Philadelphia, was experimenting with animals, and gave his conclusions in favor of the operation in his paper before the American Surgical Association in June, 1893, but it was several months before the operation was done in this country. The latest statistics (A. C. Wood, *Annals of Surgery*, Sept., 1900) give a list of 159 operations with a mortality of 8 per cent.; prostate reduced in size in 57.5 per cent.; no change in size, 3 per cent.; larger in one case; benefited in some way or other, 90 per cent. In a few cases there was mental disturbance, which cleared up later. In a few other cases improvement of faculties was noted.

Vasectomy, including ligation or excision of the cord or any part of it, properly should be considered with castration, as it was devised to accomplish the same results without subjecting the patient to what is generally considered a humiliating mutilation. One hundred and ninety-three cases are reported with a mortality of 6.7 per cent. From incomplete returns there appears to have been reduction of size of prostate in 9 per cent., no improvement in 15 per cent.

While prostatic hypertrophy has generally been considered an ailment of old age, the present trend of opinion seems to be that it exists at a much earlier period than had been supposed, though giving but few symptoms. The sexual operations then must have a field limited to patients who have lost their procreative powers. Young says in a late paper (*Jour. Am. Med. Ass.*, Jan. 11, 1902): "Castration * * * * has justly been relegated to the list of operations historically interesting, but practically valueless." This conclusion appears to be borne out by statistics, as few cases have been reported since Dr. Wood's paper quoted above. It has however a field in selected cases and can be done with knife and scissors, and hence probably occasional cases will be reported.

Prostatectomy is regarded by all surgeons as an ideal operation in the class of cases we are considering. The flow of urine is obstructed; to remove the obstruction is clearly indicated. This may be done by the suprapubic or perineal route or the two may be combined. If there are pedunculated tumors of the prostate they can be cut off through the suprapubic opening. Through this opening the capsule of the gland can be incised, and with the finger the glandular substance enucleated, the left forefinger in the rectum pushing the gland upward. By the perineal route the capsule is caught by forceps after incision, or the gland is pressed

into the wound by fingers in the bladder while the enucleation goes on. Drainage is given through an external urethrotomy incision. Guitèras in a paper read before the Genito-Urinary Section of the New York Academy of Medicine, October 16, 1901, described a modification of the perineal operation as "devised by the author," which consists in, after a skin incision, making pressure on the prostate through the unopened bladder. Claim for the same was made for A. B. Johnson, in October, 1900, and Bryson reports six cases in which he used the same method, the first having been operated on December 5, 1898.

The figures as given by Guitèras are 152 cases, mortality 16.5 per cent.; 121 cured. Incontinence has been reported in a number of cases.

The Bottini incisor is a legitimate outgrowth of the Mercier prostatome, employing a platinum blade at white heat in place of the simple knife. Although the operation was described by Bottini in 1874, it did not attract general attention, and it was a dozen years later when Freudenberg took it up. He worked away improving the methods and instruments for eleven years, and published his results Feb. 15, 1897 (*Berlin. Klin. Woch.*), and to him and Willy Meyer of New York belong the credit for the position the operation holds to-day.

The Bottini incisor has the general appearance of a lithotrite, the male blade ending in a platinum knife, and the female a hollow tube for the conduction of a cooling current of water. The instrument is introduced into the bladder, turned so that the beak is brought against the part of the prostate selected for a cut, its position being verified by a finger in the rectum, the flow of water is started and the current turned on to a degree previously determined upon. By the action of the screw at the handle the white-hot blade is drawn through the substance of the gland, the length of the cut showing on the shaft of the male blade. The cut is made slowly, generally at the rate of 1 cm. a minute. When the cut has been completed the blade is returned to its sheath, the current cut off and the beak turned into position for a second incision. Before finally withdrawing the instrument the blade must be given time to cool off. A current of 50 ampères is required to heat the knife. Freudenberg has a series of instruments carrying blades of varying lengths, but has fixed on one of 1.7 cm. as the most serviceable. Young, of Baltimore, has, by a simple

device, obviated the expense of having a number of instruments, and uses one instrument with four interchangeable blades varying from .8 to 2.1 cm. in length. Also by making the angle of the beak more acute he gives a firmer hold on the gland and prevents the instrument from pulling back into the urethra at the time of the cutting.

In the various accounts of the operation there appears to be some confusion in the use of the terms length and depth. It is evident that the length of the blade determines the depth of the incision. The length of the incision depends upon the operator.

The operation has most frequently been done under cocaine, but in this country general anaesthesia is coming to have the preference. Americans apparently have a higher nervous development than their brethren across the water, and require general anaesthesia in cases that in Europe are operated on under cocaine or without anything.

Following the operation there is a reaction, generally within 24 hours, the temperature going up to 103-104 and the pulse to 110-120. This lasts for 12 hours or so, then conditions return to normal and recovery is uneventful. Sloughs are discharged with the urine for a period of sometimes 2 weeks. Bottini at first inserted a catheter after the operation and allowed it to remain for a few days, but later abandoned its use. Freudenberg uses a catheter when hemorrhage exists, when the urine is heavily laden with pus, and when a catheter was introduced with difficulty either before or after the operation.

Many patients urinate spontaneously immediately after the operation. The quantity of residual urine begins to diminish at once and in many reported cases entirely disappears. When there is a pouch formation back of the internal orifice of the urethra, residual urine remains, but the quantity is so slight that it can be disregarded.

Wossidlo combined the Bottini incisor with the cystoscope and Freudenberg has improved the combined instrument so that he can see that his knife is in the right position. The new instrument is about 26 caliber as against 22 of the plain incisor. There is a canal through the center of the incisor for the passage of the straight cystoscopic tube, which can also be used for washing out the bladder. Chetwood's incisor is like the Bottini instrument, only shorter, and designed to give the good results of the Bottini

method through an urethrotomy wound in cases not permitting the urethral route.

Freudenberg in 1900 published a collection of cases, 683 in number, with a mortality of $4\frac{1}{2}$ to $5\frac{1}{2}$ per cent., as certain cases were included or not. He claimed 88 per cent. successes. Horwitz, in the *Phila. Med. Journal* for Nov., 1901, added some two hundred cases and gave the following statistics: 888 cases with a mortality of 5.7 per cent.; improved or cured, 84.3 per cent.; unimproved, 10 per cent.

For a better comparison of the results of the three operations I will recapitulate the statistics:

	Cases.	Mortality.	Improved and cured.
Castration,	. 159	8. per cent.	90. per cent.
Vasectomy,	. 193	6.7 "	85. "
Prostatectomy,	. 152	16.5 "	80. "
Bottini,	. 888	5.7 "	84.3 "

It is stated in regard to all these operations that many deaths were directly due to other causes than the operation. It is the old statement of surgeons that has become a matter of public jest, "the operation was successful but the patient died." It is unquestionable that with a selection of cases, better preparation of the patient and improved methods, the death rate in all the various operations could be reduced.

Personally I am in favor of the Bottini operation in all cases of prostatic hypertrophy, whether of the hard, soft or mixed variety, when the obstruction will permit of the introduction of the instrument, except where there is a pedunculated middle lobe. This can be more easily removed through a suprapubic incision, though Young shows a method by which the tumor, by cutting off most of its blood supply, is caused to shrink and fall back from the urethral opening. In support of my position I would give the following reasons: 1st. The low mortality. 2d. The operation takes but a few minutes, there is little or no hemorrhage, no shock and no raw surface to become infected. 3d. The Bottini operation shows as high a percentage of improved or cured as the other operations, and has the advantage that it can be repeated if the first cutting is not successful. 4th. A practical, but perhaps not scientific consideration, that patients will consent to the Bottini operation much more readily than to the use of the knife.

A number of accidents have happened in performing the operation, most of them preventable. The white-hot blade is easily bent, and when cocaine is used motion on the part of the patient during the cutting bends the blade so that it can not be returned to its sheath. This happened at one operation at which I was present and a number of other cases have been reported. A bit of lint or other material has clogged the cooling apparatus with bad results. An assistant must keep constant watch to see that the water is flowing. An anterior incision has caused profuse hemorrhage, which reminds me to note that the operator should always be prepared to perform a cystotomy or urethrotomy. In some reported cases a too deep incision posteriorly has resulted in a rectal fistula, and in a few cases there has been infiltration of urine.

Where no result has been reported it is evidently a case of try again. One case of incontinence following the operation has been reported by Guit  ras, and I saw a similar case at the clinic of Frank and Lewin in Berlin. Three cuts had been made in the latter case, but too deep. The cystoscope showed the white linear scars very plainly. The man's cystitis and spasm were relieved, but he evidently would have preferred his old condition to the wearing of a urinal.

Incidentally it may be of interest to call to mind the method of relieving incontinence of urine in women by injecting paraffine into the bladder sphincter. The urethra is dilated to admit the little finger, and along the palmar surface of this a needle is introduced until the sphincter is reached. Then the point of the needle is pushed through the mucous membrane and the melted paraffine slowly injected into the muscle tissue. Several successful cases have been reported. To use this method in the male does not appear to be an easy matter, but through a suprapubic opening and with a curved needle it is manifestly a possible procedure.

I want to cite a few cases that seem to me of especial interest in connection with my subject. The first is from the clinic of v. Frisch. The man had had retention for 4 years. Eighteen months previously a vasectomy had given no relief. Six hours after the Bottini operation he urinated naturally and at the end of the third week he could empty his bladder to the last drop and, urinated 3 to 4 times daily and once at night.

A second patient of v. Frisch's had retention for five years. In 1894 a lateral prostatectomy; in 1895 a median incision with removal of middle lobe, and in 1897 a suprapubic prostatectomy had been done with no relief. A complete voluntary evacuation after nine days was the result of the Bottini operation.

Freudenberg showed in Berlin a patient who had been castrated without result, but was relieved by a Bottini operation and was still passing a straight, strong stream after three years had elapsed.

Through the courtesy of Bransford Lewis, of St. Louis, to whom I am indebted for many favors, I am able to show you a specimen from a patient on whom a successful Bottini had been performed, but who died from other causes two months later. A brief summary of the case is as follows.

W. D., American, age 65, laborer. Had twenty-eight ounces of residual urine. Full bladder reached nearly to umbilicus. Jan. 27, 1898, a Bottini was done, one incision being made, $3\frac{1}{2}$ cm. long. The next day patient declared there was improvement. On the fifth day there was retention again with chill and temperature of 102. The use of a catheter relieved this, there was no further set back in the gradual improvement, and March 1st the residual urine was two ounces and he urinated only seven or eight times a day in place of thirty-five. Dr. Lewis was on the point of showing him at the medical society but he asked to wait until a hernia was operated on. This was done March 10th, but an infected wound carried off the patient. This is the first specimen from a successful Bottini operation shown in this country. A similar specimen was shown at the last meeting of the American Association of Genito-Urinary Surgeons by L. Bolton Bangs.

A strong point showing the favor in which the Bottini operation is held is that it has been done more times than all the others put together. This fact also renders the statistics of greater value. The only objection that I have heard made to the operation is that voiced by Bernays at the late meeting of the Western Medical Association, at which he said he objected to "operating in the dark." This appears to me to be entirely fatuous. The cutting of a stricture or crushing of a stone is done just as much in the dark, and could anything be more shrouded in gloom than digging away at a prostate with the finger tip though a slit in the perineum? I have as yet failed to find a surgeon who has made a fair trial of the operation with whom it has not grown in favor

with added experience, and I am forced to the conclusion that the objectors are in a state of eclipse.

It is still a new operation. With experience, improved methods and instruments and a clearer definition of the conditions presented to the operator, I believe that the time will come when it will be universally accepted as the operation of choice, and there will be no ground for discussion.

DISCUSSION.

Dr. Balloch said that the subject was very interesting, and it had been ably presented. One point, however, required modification; in no given case was there a choice between the 3 operations mentioned. The prostatic disease was not an entity, but a part of a more general process, and there always existed conditions which limited the choice between operations; chief among these were the condition of the bladder and urine, of the kidneys, and of the heart and arteries. Some cases did not require operation at all, *e. g.*, patients who got on comfortably by using the catheter once or twice daily, and who had fairly good urination with a little residual urine. Conditions might arise in such cases, however, which would necessitate surgical intervention.

In general, the patients needing operation could be divided into two classes. The following illustrates the first. Man, 45 to 65 years old; after a short catheter life the bladder becomes infected, but the process does not extend up the ureters or involve the kidneys. Here the only proper treatment is prostatectomy. In illustration, the following case was related.

James B., colored, age 60, entered Freedmen's Hospital, Washington, March 5, 1902, with retention of urine, complete for 24 hours. Family history unimportant. Personal history contained nothing pertinent to his present attack, except an increasing difficulty in passing urine for several years. He was unable to fix any precise time as the beginning of his trouble. About a year and a half previously he had had an attack of retention, which was relieved by medical means. For the past ten days had been greatly troubled by irritation of the bladder, passing urine in small quantities almost every hour. On admission the bladder was found greatly distended, forming a perceptible tumor above the pubes. The house surgeon was unable to pass a catheter, on account of pain and spasm, until the patient had been anaesthetized, when a soft rubber catheter was introduced and tied in. I saw him the next day, and found the trouble to be due to a greatly enlarged prostate. The large lateral lobes were readily made out, and on account of the difficulty in passing the catheter, I suspected that the middle portion was also enlarged. The catheter was left in for three days and then removed. In the mean time

the urine was examined and found normal. The patient was a strong, healthy laboring man in perfect health, aside from his urinary troubles, with sound vital organs and healthy arteries. As soon as the catheter was removed the difficulty in urination immediately returned, and the catheter had to be constantly used. On account of his exceptionally healthy condition the case seemed one particularly favorable for prostatectomy, and the operation was proposed to him and accepted.

March 12th. A median incision, three inches long, was made, running upward from the symphysis pubis. The bladder was opened and the cut edges held apart by loops of silk used as retractors. A finger introduced into the bladder came in contact with a large, pedunculated, middle lobe, on each side of which was a lateral lobe the size of a hen-egg. The mucous membrane over the middle lobe was nicked with scissors and an effort made to enucleate it. As it did not peel out readily it was grasped with lithotomy forceps and removed piecemeal. After the middle lobe was out of the way it was found that the finger could easily be pushed between the lateral lobe and its capsule on each side. Each lateral lobe was therefore enucleated without any special difficulty, save such as arose from a short finger. This gave some annoyance when it came to dealing with the under sides of the lobes, but they finally shelled out. The hemorrhage was controlled by the injection of very hot water and by pressure with hot sponges. A sound was passed into the bladder and a perineal urethrotomy done. A drainage tube was passed through the suprapubic opening, into the bladder and thence on through the perineal opening. The bladder was thoroughly washed out and the upper part of the suprapubic wound closed by sutures, the rest of the suprapubic and the perineal wound being packed with iodoform gauze around the drainage tube. The operation lasted an hour and a quarter. The weight of the prostate was two and one-half ounces.

Since the operation the temperature has never risen above normal and the pulse has ranged between 80 and 90. Most of the drainage has been through the suprapubic opening, but the perineal wound is now beginning to drain freely. He is taking urotropin, which seems to keep the urine sterile. The bladder is washed daily with a solution of boric acid. All drains have been removed. The wounds are free from infection.

The second class may be described as follows: Man 65 to 80 years old; senile changes present; has used catheter a long time, and bladder has become infected; renal symptoms; in short, an unfavorable case; here a radical operation is not permissible, and the Bottini operation is indicated; it can be done under cocaine if preferred.

Statistics concerning the results of this method should be taken with a grain of salt, inasmuch as it was comparatively new, and as,

in all such cases, operators were liable to be too sanguine as to the number of their successful cases. He knew of one case in which the Bottini operation was performed in November and reported in December as having been successful; severe symptoms arose soon after, and the outcome of the operation was anything but favorable; nevertheless it went on record as a successful operation.

One disadvantage connected with the operation was that the length of the blade of the Bottini instrument could not easily be adapted to the degree of hypertrophy of the gland. There was especial danger of doing injury when the central lobe was hypertrophied, but small and hard. He was hopeful that in the future these cases would be brought to the attention of the surgeon earlier, before secondary changes in the urinary organs occurred; if so, prostatectomy would prove the best operation, and the Bottini method would be used less frequently. Castration was hardly worth considering: its results were uncertain, and it had been followed by serious mental symptoms.

Dr. Snyder had performed about all of the operations for hypertrophied prostate except the Bottini; nevertheless he believed that it would become the operation of choice before long. While it was true that castration was now in disfavor, he had never seen a better result than that which followed it in a case which came under his observation; in another case the operation was successful so far as the prostate was concerned, but it was followed by a most severe mental depression, which fortunately, however, lasted only a short time. He could recollect other cases in which castration on one or both sides had been followed by shrinking of the gland. He had obtained good results from prostatectomy. He recalled the principal points of the operation; the main difficulty was experienced in finding the line of cleavage; when this was found enucleation of the gland was easily accomplished.

Dr. Van Rensselaer had seen the two cases mentioned by Dr. Snyder; they were both successful and, although the patients eventually died, it was from other causes, and the relief afforded by Dr. Snyder's operations was very great. He did not think, however, that castration had much of a future before it; he had performed it 5 times, and in 3 of them the subsequent mental symptoms were alarming. It was a question whether the removal of one testicle might not be followed by good results in some cases, when the excision of both would be followed by serious sequelae.

Dr. J. Ford Thompson said that his experience with castration had been unfavorable, and he believed that it had deservedly fallen into disuse. The Bottini operation was interesting, and there was a considerable field for its use, particularly in mild cases of prostatic hypertrophy, in old or very feeble patients, and in a few other instances. But on the other hand, its employment in cases for which it was unsuited did positive harm by preventing

a radical operation and permanent cure. He laid especial stress upon this point.

He had lost his first patient from prostatectomy two weeks ago. The man was 70 years old, and when first seen he was screaming with pain because he had not been able to micturate for the last 24 hours. Every effort to pass a catheter or other instrument having failed, he was obliged to puncture the bladder above the symphysis in order to afford relief from the agonizing pain. The next morning he operated through a perineal incision; he catheterized the urethra from above, and twisted off the hypertrophied middle lobe; this left plenty of room for the passage of urine. The patient rallied from the operation, but during the night there was considerable hemorrhage into the bladder and he died in the next 24 hours. This was the first time in his experience that twisting off the middle lobe had been followed by hemorrhage. The removal of this lobe was all that was necessary in many cases.

While the Bottini operation had its place and deserved further trial, he was not inclined to look upon it as a distinct advance in surgical procedure. Prostatectomy was the ideal operation in the vast majority of cases.

Dr. E. F. King, in closing, thanked those who had participated in the discussion. That all agreed with him was most gratifying. The apparent criticisms would be found groundless after a careful reading of his paper. It should be remembered that the prostate has a function to perform even at the age of 60, and that the Bottini operation does not interfere with it.

CASE OF CHRONIC INTERNAL HYDROCEPHALUS.*

By D. S. LAMB, A. M., M. D.,

Washington, D. C.

A light mulatto infant, age 18 months; its father is said to have had "fits," and the child to have had congenital epilepsy. In the summer of 1901 it had diarrhoea for about 12 days, and also had convulsive contractions of muscles. Was in hospital 3 months, from December 3, 1901 to March 3, 1902, when it died. It neither walked nor talked, but while in hospital had only one slight convulsion. The respiration was 20 per minute until December 15, when it rose to 24 and continued to increase until, January 29, it was 34, after which it fell to 24; the temperature was normal or subnormal all the time except for a few days

*Reported with specimen to the Medical Society of the District of Columbia, March 26, 1902.

early in January, when it reached 101.4. The child wasted away to a mere skeleton, but the fontanelles closed and the skull was of about the usual size. The convolutions of the cerebrum were much shrunk and sclerosed as far back as the intraparietal fissure on each side and the gray matter was very pale; back of this fissure the brain was converted on each side into a sac with thick, smooth wall, and containing clear serum. There was also a little recent pleuritic lymph over one small part of the right lung; a small abscess in left lung, and the stomach showed punctate hemorrhages. Otherwise the thoracic and abdominal organs were normal.

In this case the serous dilatation affected the middle and posterior horns of the lateral ventricles, the anterior horns being only slightly involved, and the third and fourth ventricles not at all. The choroid plexuses were normal; no sign of pressure on blood vessels was seen, and no thrombus; and it is very difficult, therefore, to explain the hydrocephalus. The limitation of the dilatation to the back part of the brain is unusual, as also is the fact of the fontanelles being closed, although the history would suggest a congenital disease. The sclerosis of the convolutions was very marked, and of itself would explain any want of intellectual development.

REPORT OF EXECUTIVE COMMITTEE IN REGARD TO "PRIZE ESSAY."*

The Executive Committee respectfully submits the following recommendations relative to the proposed award by the Medical Society of a prize for the best essay on some medical or surgical subject:

1. That a prize of two hundred and fifty dollars be conferred upon the active member of the Medical Society of the District of Columbia who shall present the most meritorious essay upon any medical or surgical subject.

2. That this prize be known as the Medical Society essay prize.

3. That the award be made under the following conditions:

- (a) All essays, mottoes and devices on envelopes, etc., shall be in typewriting. The name of the author of each competing essay shall be enclosed in a sealed envelope bearing a suitable motto or device, the essay itself bearing the same motto or device. The title of the successful essay, and the motto or device, are to be

*Reported to the Medical Society of the District of Columbia February 19, 1902.

read at the meeting at which the award is made, and the corresponding envelope to be then and there opened and the name of the successful author announced. The essays of unsuccessful contestants will be returned to them upon application, if such application be made within sixty days after the award of the prize. Essays unclaimed at the expiration of that period will be destroyed. In no case in which an essay is thus destroyed will the envelope revealing the identity of the unsuccessful contestant be opened.

(b) The prize essay, and the essays receiving honorable mention, shall become the property of the Medical Society.

(c) The prize shall be conferred and honorable mention made of the two other essays considered worthy of this distinction, at a general meeting of the Medical Society. The prize essay shall be read at the first regular meeting occurring after the stated meeting in January [1903].

(d) No essays will be received after November 1, 1902.

4. That a circular letter stating the conditions under which the Medical Society will award this prize be sent by the corresponding secretary of the Society to each member thereof.

5. That in this competition essayists be limited to those graduating since 1890.

6. That the essays submitted be examined and the prize and honorable mention awarded by judges selected by the Executive Committee. Not less than three judges to be appointed for the examination of any one class of essays or for the final award of the prize and of honorable mention, and all questions to be determined by a vote of the majority.

7. That if the examining committee selected by the Executive Committee, does not consider the essays submitted of sufficient merit to justify the award of the prize, no prize be awarded but the money be offered the following year upon conditions to be hereafter determined.

W. W. JOHNSTON, *Chairman*.

REPORT OF THE EXECUTIVE COMMITTEE IN REGARD TO PUBLISHING A "PERIODICAL."*

The Executive Committee respectfully reports that it has carefully considered the report of the Editorial Committee, dated February 12, 1902, relative to the publication of a journal by the Medical Society. The Executive Committee respectfully recommends that the Editorial Committee be authorized to proceed with the publication of a journal in accordance with the scheme laid down in the report above referred to, at a gross cost not to exceed six hundred dollars per annum, and that said Committee be authorized to solicit advertisements and subscriptions for the proposed journal, and to fix prices therefor.

W. W. JOHNSTON, *Chairman*.

*Reported to the Medical Society of the District of Columbia, Feb. 19, 1902.

LETTER OF THE EXECUTIVE COMMITTEE IN RE-
GARD TO ORGANIZATION OF PROJECTED
MUNICIPAL HOSPITAL.*

WASHINGTON, D. C., *February 21, 1902.*

To the HONORABLE COMMISSIONERS
OF THE DISTRICT OF COLUMBIA.

Gentlemen: The recent reports of November 21, 1901, and February 6, 1902, on the subject of the organization of the projected Municipal Hospital, made to you by the Board of Charities, have been considered by the Medical Society, and its Executive Committee has been directed to forward to you the following communication.

The features of the above reports to which the Society wishes to draw special attention are:

1. The objection made by the Board to the proposed expenditure for the construction and support of laboratories.
2. The objection made to the teaching of clinical medicine in the hospital.
3. The suggestion as to the advantages of having a divided staff of white and colored physicians.

(1) In regard to the matter of the erection of laboratories the Society begs leave to say, that at the present time no hospital can be considered to be properly equipped that has not complete laboratory facilities. The hospital laboratory is not used for experimental investigation, but for the daily practical needs of the hospital. It is impossible in the present state of our knowledge to recognize certain diseases or to determine their appropriate treatment and its effects without the use of chemical analysis and the microscope; and every physician in private practice has constant need of these aids and constantly employs them. A hospital that aims at giving the best skill in the diagnosis of disease and in its treatment cannot carry on its work without a chemical, bacteriological and pathological laboratory, and in the eyes of the world a hospital without such laboratories would be not more perfect in its equipment than one of fifty years ago. The Medical Society for these reasons supports the plans of the Commissioners which look to supplying the Municipal Hospital with every appliance that medical science now affords. It is argued that Washington should not be behind the rest of the country in giving its sick poor the advantages that exist in all modern hospitals.

(2) The objection made by the Board of Charities to the teaching of clinical medicine in the Municipal Hospital is that patients object to entering hospitals where clinics are given, and that as this hospital is chiefly for chronic diseases, which are not of special interest or value to the student, it is inadvisable to permit clinical instruction to be given.

* Reported to and approved by the Medical Society District of Columbia, Feb. 19, 1902.

In regard to the first statement it may be said that the giving of clinics does not, as a matter of fact, deter patients from entering the wards of a hospital, and in the municipal hospitals of the chief cities of this country the largest number of patients are in hospitals where such instruction is given. Mention may be made of the hospital of the University of Pennsylvania, the Philadelphia Hospital (Blockley), the Boston City Hospital, the Massachusetts General Hospital, the Johns Hopkins' Hospital, and the Cook County Hospital of Chicago.

As a rule patients seek hospitals where clinical instruction is given, feeling that in such hospitals the best skill is found, and the most thorough study given to their cases. Nor, as a matter of actual experience, is it found that patients object to being presented to the students for their instruction. It is rare that such objection is ever made.

The second reason given for not having clinical teaching in the Municipal Hospital is, that the cases received there will be chiefly chronic, and therefore, not interesting nor of importance to physicians, nurses and students. By far, the larger number of diseases that are met with by physicians in practice are forms of chronic disease; such diseases are often difficult of recognition, and not easily cured or relieved. It is, therefore, of the highest importance to give instruction to intending physicians in diseases of this class.

In regard to the general question of clinical instruction, the Society believes that it is the duty of every municipality controlling hospitals, to provide means for clinical instruction. This is now done in the municipal hospitals of all our large cities. Practical knowledge of disease and its treatment must be gained in a hospital under qualified teachers or in the ordinary course of private practice. The Society submits that no young graduate is qualified to begin practice and to treat acute and chronic diseases without having had proper bed-side instruction, and it is only in a hospital that such instruction can be given.

Washington has now several medical schools, and, as an educational medical center, is growing in importance. All of its existing public hospitals have opened their doors to the students, and a municipal hospital could not consistently be closed to them.

(3) The suggestion as to the advisability of having the white and colored patients treated by white and colored medical and nursing staffs respectively is not one that is likely to meet with approval. A hospital staff should be composed of physicians who are best qualified for the work of the hospital. Skill and knowledge should be the only test; no one should be selected on account of color nor excluded for color, and there seems no reasonable ground for the unusual procedure of having white and colored patients treated by doctors of their respective colors.

The alternative proposition contained in the letter of the Board

of February 6, 1902, seems an excellent one, and is endorsed by the Society.

The recommendation of the Board as to the advisability of making ample provision for the care of convalescents and for treatment of inebriates meets with the unqualified approval of the Society, and the hope is expressed that it may be adopted.

The Medical Society is deeply interested in the Municipal Hospital and is anxious to have it the most perfect of its kind. This interest has been the motive for addressing you on the subject, and to the views here expressed the Society asks your attentive consideration.

Yours very respectfully,

WILLIAM W. JOHNSTON, *Chairman.*

GEORGE N. ACKER,
EDWARD A. BALLOCH,
J. WESLEY BOVÉE,
G. WYTHE COOK,
WM. B. FRENCH,
D. PERCY HICKLING,
GEO. M. KOBER,

G. LLOYD MAGRUDER,
T. N. McLAUGHLIN,
WM. GERRY MORGAN,
EMORY WM. REISINGER,
CHAS. W. RICHARDSON,
Z. T. SOWERS.

MISCELLANEOUS REPORT OF THE EXECUTIVE COMMITTEE.*

The Executive Committee respectfully submits the following report :

(1) It is recommended that the Medical Society endorse a bill creating a commission for the condemnation of insanitary buildings in the District of Columbia, and for other purposes (S. 3,244), and that it authorize the Executive Committee to take suitable action to secure its enactment if possible.

(2) It is recommended that the Medical Society endorse a bill to regulate the production and sale of milk and cream in and for the District of Columbia (S. 1,686 and H. R. 11,005), and that it authorize the Executive Committee to secure its enactment if possible.

(3) It is recommended that the initiation fee imposed upon applicants for membership in the Society be reduced to five dollars.

(4) It is recommended that the third and fourth recommendations contained in the report of the Auditing Committee be adopted, except that the Recording Secretary be directed, instead of requested, to certify to the Treasurer in writing all resolutions authorizing the expenditure of money.

(5) It is recommended that the Society devote one Wednesday

*Reported to the Medical Society of the District of Columbia, March 5, 1902. Nos. 1, 2, 5, 6 and 8 were adopted.

evening in each month solely to the exhibition and discussion of pathological specimens.

(6) It is recommended that the meetings of the Society be called to order promptly at eight o'clock.

(7) It is recommended that the paper of the evening be followed by the discussion thereof on the same evening.

(8) Acting under authority of the Society, the Executive Committee has prepared, and will file with the Senate Committee on the District of Columbia, a protest against a bill to prevent cruelty to certain animals in the District of Columbia (S. 190) and a bill for the regulation of scientific experimentation upon human beings and animals in the District of Columbia (S. 3,068).

By order of the Committee :

W. W. JOHNSTON, *Chairman.*

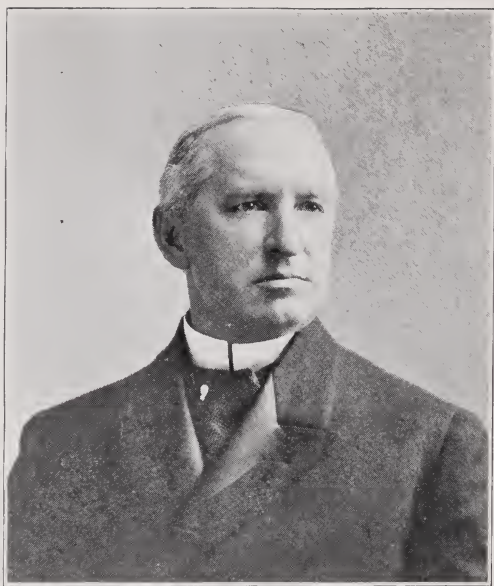
METHYL-ALCOHOL AS A POISON. REPORT OF THE COMMITTEE ON PUBLIC HEALTH.*

The Committee on Public Health to which was referred Dr. Swan M. Burnett's paper on "Methyl (wood) Alcohol as a Cause of Blindness—should it be placed on the list of poisons?" for the purpose of considering the advisability of recommending legislation that will place methyl-alcohol upon the list of poisons, as advised by Dr. Burnett himself, respectfully submits that :

WHEREAS, Dr. Burnett in his paper has clearly demonstrated that methyl-alcohol is a most active poison, the ingestion of so small amount as one tablespoonful, or the inhalation of its fumes or its local application being sufficient to cause almost, if not total blindness, and even to endanger life itself, the Committee respectfully recommends that the present law in this District in regard to the sale of poisons be so amended as to include methyl-alcohol and all substances known to contain methyl-alcohol, among the active poisons, and that it be placed in Schedule "A." (See report of the Health Officer for District of Columbia for 1900, page 74.)

The Committee also recommends that a copy of these recommendations, together with a printed copy of Dr. Burnett's paper, be sent to the District Commissioners and the District Committees in Congress, and that the Executive Committee of this Society be requested to take suitable steps to bring about the necessary legislation to accomplish the recommendations herein proposed.

*Reported to the Medical Society of the District of Columbia, February 26, 1902.



DR. WILLIAM WARING JOHNSTON.

In Memoriam.

DOCTOR WILLIAM WARING JOHNSTON.

WHEREAS, The Medical Society of the District of Columbia has sustained an irreparable loss by the death of WILLIAM WARING JOHNSTON, who died at Atlantic City on the 21st day of March, at the age of fifty-nine years,

*Be it Resolved,** That in the death of DR. JOHNSTON the Medical Society has lost one of its most useful, brilliant and accomplished members. In every sphere of professional labor—alike as medical practitioner, author and teacher—he has acquired a distinguished eminence which was richly deserved. Notably exempt from affectation and display, he quietly performed the difficult duties of his daily life with a remarkable spirit of self-abnegation and the most persistent industry.

After devoting many years of his early life to diligent study and preparation for medical practice, by following as an humble pupil the leading teachers of medicine in some of the great hospitals of America and Europe, he began his professional career, mentally well equipped and with a thorough education for the long and difficult task of his future professional destiny.

Always remaining a student, ever on the alert for reforms and improvements in the diagnosis and treatment of disease, especially zealous for reform in the management of hospitals, both for the benefit of their inmates as well as to maintain the dignity of the profession he adorned, and always enthusiastic in the efforts to elevate the standard of medical education and improve the methods of teaching, it may be justly said that in every path of duty his work was well and faithfully executed.

It was chiefly, however, as a learned, skilful and accomplished practitioner of medicine that he acquired his most distinguished eminence. Here his superiority was universally recognized by his professional brethren who so constantly called upon him for assistance and advice, and the numerous devoted patients who now join with us in deploring his untimely end will not only lose the privilege of his skilful care, but will also miss the kindly sympathy and tender interest with which he always seemed to regard their

* Unanimously adopted by the Medical Society of the District of Columbia, at a special meeting, March 24, 1902.

afflictions, sufferings and fears. The community has lost not only an ideal physician but also a public-spirited citizen who was ever active in the promotion of the sanitary welfare of his native city.

Cut off in the zenith of his mature and distinguished usefulness, at a time when the deserved rewards of a laborious life might justly have been anticipated to ease the burden of declining years, we deeply sympathize with his sorrowing family, and with the profession and citizens of Washington, in their irreparable loss.

To his bereaved relatives we beg to offer our earnest and sincere condolence, and desire that a copy of this record and proceeding be forwarded to them as an expression of the same.

HENRY D. FRY,
J. FORD THOMPSON,
A. F. A. KING,
GEO. M. KOBER,
WM. C. WOODWARD,
Committee.

MEMORIAL MEETING OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA, HELD APRIL 9, 1902,
AT COLUMBIAN UNIVERSITY.

Introductory Remarks by SAMUEL S. ADAMS, A. M., M. D.,
President of the Society.

Ladies and Gentlemen : One year ago, when the Medical Society of the District of Columbia assembled in this hall to pay the last tribute of respect to its oldest and highly honored member, no one thought that it would be called together so soon to express its love and esteem for another—the distinguished physician, William Waring Johnston.

In spite of the sadness of the hour, your presiding officer deems it a great honor to bear testimony to the worth and work of one who had no peer in this body. This distinction which is accorded to him, is based upon more than twenty years' observation of his fidelity to the many and various duties imposed on him by his colleagues in this Society.

The records show that fifty years ago his father was an earnest worker in this Society, and later received from it the highest award within its gift, the Presidency. Dr. William P. Johnston was elected a member January 5, 1842, and served as President during the year 1870, twenty-eight years thereafter.

Among the distinguished Presidents of this Society since its organization in 1819, only one of them left a son who has worn

the *toga*, and around the memory of this worthy boy we place the laurel wreath to-night.

Dr. William Waring Johnston was elected a member, December 2, 1868. He served as Secretary in 1870, and as President in 1885. The father was a faithful worker for 28 years before receiving an honor which the son had conferred on him after 17 years' service (1885).

Four months after his election, April 14, 1869, we find him reporting his first case, unique in being the first of the kind reported in this city—that of hydronephrosis of the right kidney. In the discussion which followed, the younger Johnston exhibited such familiarity with his subject as to merit and secure the praises of his seniors. This was the beginning of his admirable method of presenting cases. December 22, 1869, in a discussion on puerperal fever, he called attention to the use of carbolic acid in treating this disease in hospitals, and favored the new theory of septic absorption as advanced by Lister and Elliot, thus early demonstrating his ability to keep pace with the leaders in thought.

His papers were characterized by their logic, their diction, their completeness. Those he read to us were not based upon theories, but on deductions drawn from close observation and profound study.

As a debater he was clear, practical and considerate of those holding different opinions. He was always self-possessed in the heat of debate and was usually conservative in his utterances. He exhausted the subject without tiring his audience; he entertained his hearers as well as instructed them.

As a committeeman he was ever alert to promote, by legislation, the healthfulness of this District and the health of its citizens. His strong personality always added weight to his convincing arguments whenever and wherever he appeared in the interest of the public welfare.

His interest in the younger members was well recognized, and his last report, as Chairman of the Executive Committee, was for improving the opportunities to advance the knowledge of the young men in the Society. January 27, 1902, a confidential letter was sent to twenty-four members of the Society, requesting them to subscribe to a prize essay fund; the competition for this prize to be confined to members who had graduated since 1890. Two days later Dr. Johnston sent his check, with the following note:

January 29, 1902.

"DEAR DR. ADAMS: I am very glad to contribute to the object you have in view. The plan is an excellent one and is a new departure in the right direction. W. W. JOHNSTON."

The good deeds of our colleagues are too often forgotten, but let not this be said of Johnston's. Steps have already been taken

to endow the Johnston Memorial Hospital, and I am sure the members of this Society will endorse the project. At its dedication the Medical Society of the District of Columbia should have inscribed upon a mural tablet: "William Waring Johnston, M. D., Physician, Scholar, Counsellor, Teacher and Conservator of the Public Health."

*Biographical Sketch of Dr. Johnston, by A. F. A. KING,
A. M., M. D., Washington, D. C.*

A little more than half-way back over the century recently closed, at a time when the evergreen hollies and Christmas holidays gladdened the hearths and homes of Washington, viz: on the 28th of December, 1843, William Waring Johnston was born; and in the early morning of March 21, 1902, in Atlantic City, New Jersey, whither he had gone by direction of his physicians, at an hour when the night winds mingled their requiem with the voice of many waters, his departing spirit took its flight, and the lamp of life went out—a life of fifty-nine years, just reaching the zenith of its intellectual development and usefulness; a life in which the ages of spring and summer had given place to the autumnal epoch, richly laden with the fruits of long experience, culture and study.

Beginning, as every life must, with the slender and uncertain thread of infancy, it soon grew into a stouter cord, and finally developed into a cable of strength, conspicuously prominent in the textural fabric of the community in which he lived and moved and worked.

Contemplating such a life, especially after knowing the mature man and his magnificent acquirements, with what an abounding interest do we survey the events and circumstances surrounding his early years; and with what a ruthless prodigality does the hand of time, after fifty years, scatter these jewels of recollection into the ocean of oblivion!

We know, however, that Wm. W. Johnston was the eldest son of Dr. Wm. P. Johnston, himself an eminent physician of large practice, still gratefully remembered by many of his former patients in Washington, and who for many years filled a Professor's chair in the Medical Faculty of Columbian University. Dr. Johnston, the elder, came to Washington from his native city, Savannah, Ga., in 1840. He first lived in one of the houses known as the "Six Buildings," on Pennsylvania Avenue, between Twenty-first and Twenty-second Streets; afterward moving to the southeast corner of Seventh and F Streets, N. W., into a new house, one of several, then called "Union Row." It was in this house that his son, William W., was born. In 1848 or '49 the family again moved to another house on Seventh Street, between E and F Streets, nearer the middle of the square, opposite the Post Office building;

this was the home of Wm. W. Johnston's boyhood and youth. In those days, before the encroachment of business houses, this section of the city was an eligible locality for private residences, as the West End is at the present time.

The mother of Dr. Johnston was Mary Elizabeth, daughter of Mr. Bernard Hooe, of Prince William County, Va.—a courtly gentleman of the old school, whose genial hospitality some of us can pleasantly recall.

The early education of young Johnston began at his father's residence under direction of a private tutor, a Scotch gentleman, Mr. Hector Munro, who prepared him to enter St. James College, on Chestnut Hill, near Baltimore, which he did in 1861, at the age of about 18 years. In 1862, however, this college, placed as it was between contending armies during our civil war, was obliged to close its doors, and William Johnston returned to Washington, where he continued his studies, privately, under the direction of Mr. Charles B. Young, an accomplished instructor of youth, who still carries on his well known school. Mr. Young states that: "Willie Johnston was an earnest, appreciative, responsive student, quick of apprehension, and it was delightful to see with what keen relish he grasped new ideas, with what discrimination he sifted, digested and appropriated them. * * *

Under a delicate reserve that amounted almost to shyness, there was in him an enthusiasm that was intense, and a sympathy with all things true, beautiful and good."

He remained under Mr. Young's tuition for about a year, devoting himself chiefly to rhetoric, logic, psychology and English literature.

In the autumn of 1863, he went to Philadelphia to begin his medical studies at the University of Pennsylvania, where his instructors comprised Leidy, Stillé and Penrose; Rogers the chemist, Carson on therapeutics, and the Smiths—Francis Gurney and Henry H. Here also he followed the clinical teaching of Da Costa, Agnew, Morton and others. He belonged to the quiz class of Drs. Boling, Hutchison and Hodge, Jr.

Those who remember him as a fellow-student will recall the serious earnestness and industry with which he pursued his studies, and the punctuality with which he daily attended the lectures and recitations. During hours of recreation, however, he was always a genial and jovial companion, keenly alive to the enjoyment of legitimate wit and humor, but in the merriest hours of student days his levity never exceeded the limit of dignity and decorum, as those who knew him later in life may well suppose.

After attaining his medical degree at the University of Pennsylvania, in 1865, he became an interne at the Bellevue Hospital, New York, where he was on duty during the cholera invasion of 1866.

It may be of interest to relate that while there his room-mate

—whose name, like that of many another martyr-student is forgotten—was attacked with cholera and died after a brief illness of three hours. The one was taken, but, fortunately for us, Dr. Johnston was left.

Leaving New York, after the expiration of his term of service at Bellevue Hospital, Dr. Johnston went to the University of Edinburgh, where he became the guest and pupil of Dr. John Hughes Bennett, a noted Professor of clinical medicine in the Edinburgh Royal Infirmary, and from whose teaching he no doubt learned the important lesson of treating disease by rest, food and hygiene, rather than by bleeding and drugs, which had long been the prevailing practice.

From Scotland Dr. Johnston went to France, and finished his medical studies, under the direction of leading Parisian clinicians, in the hospitals of Paris. Returning to Washington in 1868, he began his distinguished career as a medical practitioner, of which those who are to follow me will speak.

In reviewing the work of his life at a single glance, and its exalted spheres of usefulness, we cannot evade the thought that many a Christmas may return, with its hollies and its holidays, and many a storm lash the sea-girt shores of Jersey, before the void left by the demise of our esteemed associate can be adequately filled.

Those suffering souls by fear unmann'd
Who relied on his trustworthy skill,
Will miss 'the touch of a vanished hand
And the sound of a voice that is still.'

Dr. Johnston was thrice married. A widow and six children—four daughters and two sons—survive him.

His eldest son, William Bernard Johnston, graduated in medicine some years ago, and since then has been devoting himself to hospital work, thus following the example of his illustrious predecessor.

All of us, who revere and cherish so warmly the memory of the father, cannot fail to regard with eager and kindly interest the future career of the son whom he loved.

His Personal Characteristics, by HENRY D. FRY, M. D., Washington, D. C.

The crystallization of the life history of Dr. W. W. Johnston demonstrates his *personal characteristics* and brings to view a rare collection of precious and valued jewels. Conspicuous among these gems is that of extreme modesty.

He went among his patients and his fellow practitioners in the same quiet and gentle manner. Although numbering among his clientèle the most distinguished and wealthy at the Nation's

Capital, he never mentioned the names of his patients with any boastful spirit. Creditable work accomplished, whether brilliancy of diagnosis or success in treatment, was referred to only to reflect his admiration of the Science and Art he followed, never for personal gratification.

In striking contrast to the modest and quiet manner with which he pursued his laborious duties were the energy and force he infused into his work. In the earlier years of his career he never allowed himself any rest or recreation during the summer months; later he took physical rest but not mental recreation. When on his vacation he busied himself by writing medical articles or by research. By correspondence he kept himself in constant touch with his patients, advising them and often going to visit them professionally. The bow was not unbent; the cord was merely loosened.

Returning to the city in the early fall, he would put his shoulder to the wheel, and there was no break or let up until another summer came around. It was a professional treadmill of work day and night.

Before the time of trained nurses he would end a laborious day's work by watching all night at the bedside of a very ill patient. Night after night this would be kept up by himself or an assistant until the anxiety was over and success crowned his efforts or death ended the struggle.

Familiarity with suffering and death did not breed contempt or deaden the finer instincts of his nature. Always sympathetic and kind, he felt the greatest solicitude for the sick, and carried home with him at night their troubles and anxieties. The death of a patient depressed him for days afterward.

As the faithful work of the trained nurse came to lighten his labors, so later did that of the stenographer and bookkeeper. Before that time he would often sit up until one or two o'clock in the morning writing his letters or studying.

Some faint idea may be formed of the phenomenal amount of work he accomplished when we add to all this that which he gave to the medical college and hospital in the way of didactic and clinical lectures. He would scarcely take time to eat his dinner, in order to keep his lecture hour. But this is not all. He was a hard worker in the Medical Society, always ready to advance its interests, and to look after all questions relating to the public health. When advised, a short time before his death, to give up all these extra demands upon his time and strength because he was so busy, he replied, "Some one *must* do these things, and the busy man only *will* do them."

Dr. Johnston's success in life was not due alone to his industry. He was well equipped for his life's work and fully abreast of the times, but the most striking characteristic of his work was his close attention to the little things—to the minutiae. No matter

how slight the case of sickness or how severe, he left the most careful directions regarding diet, nursing and the administration of medicines. These directions were always clearly written out, and rewritten at subsequent visits if any changes were desirable, and attention was given to numberless little details that no one else would think of. He was conservative in his treatment; he used as little medicine as possible and relied a great deal on good nursing and diet. He avoided as much as possible the administration of medicines that were disagreeable to take.

Very sensitive himself, he was always careful not to give offense to others by word or action. One who had intimate relations with him for twenty-five years, and was for fourteen of them associated with him in his daily work, can bear witness that he never heard Dr. Johnston say an unkind word of any one. He was loved and esteemed by all with whom he came in contact, in the profession and out, and he treated all with the same kindness and consideration. Although having many friends, it may seem strange to say he had no intimate friend. The explanation is that every moment of his life was so occupied he had no time to indulge himself with such relations. He had only recently advised a young physician in whom he was interested not to make many intimate friendships as they would only keep him back in his professional work. Young men beginning their professional career came to him for advice and encouragement. He was always ready to lend a helping hand, and to-day many physicians in active practice are indebted to him for their start in life.

Dr. Johnston was a fine conversationalist and he was well informed in literature and French and English history. Behind his quiet, gentle manner he had a keen appreciation of humor.

It is reserved for the last to say that in all his relations with his fellow man, in none did he rise to a higher standard of excellence than in his conduct as a consultant. Sound in judgment, clear and practical in his views, he was ready to bring the knowledge of Science to the practice of Art.

The young and inexperienced were not only helped over difficulties but they were treated with the same deference and respect as the older colleague. If he approved of a course of treatment he said so, and made no unnecessary changes to enhance his own importance in the eyes of the patient. His conduct was clear cut and honest.

Dr. Johnston could readily have answered in the affirmative that trying question, "Am I my brother's keeper?"

*Dr. Johnston as a Physician, by WM. OSLER, M. D., LL. D.,
Baltimore, Md.*

In his character as a physician a man has a threefold relation—with the public, with the profession and with himself. Not one

of us in all, only a few of us in some of these diverse relations, live up to our full capacity. In an exceptional degree our departed friend was faithful to this triple allegiance.

The public of today makes it increasingly difficult for the physician to walk in the old paths, and yet we cannot afford to abate one jot or tittle from the noble standards of the Hippocratic code, that most memorable of human documents. What a blessing it is to our fellow creatures to feel that they can go freely to the physician and unburden tales of weakness and of woe, which not even the confessional receives! And it is one of the chief glories of our profession that in every age we have held high this standard of honor, and have inspired and deserved this sacred trust. Dr. Johnston had in singular measure this gift of inspiring confidence. A firm but gentle manner, decision of voice and of character, unfailing kindness and a rare knowledge of the symptoms and treatment of diseases, combined to make him a practitioner of the very first rank. And this confidence he never abused. He neither pandered to the press, which is always too ready to tempt the prominent physician to tickle the itching ears of a gossip-loving generation with prurient or spicy details of cases; nor did he trade upon the credulity of his patients, but *caute caste et probe* dealt as an honest man with his suffering fellow creatures.

A physician's relations with his colleagues may be wide spread and intimate, or they may be of the most restricted kind. There are doctors in large practice who, without the slightest sense of responsibility, live secluded from all professional intercourse. In the midst of an active professional life it becomes increasingly difficult to keep up an interest in teaching, in medical societies and in medical literature; but, as you will hear, in all these lines Dr. Johnston worked with energy and zeal. I may refer briefly to his literary and scientific work. Influenced strongly at second hand through his father by the French school, and directly by J. Hughes Bennett, he very early learned the art of careful observation. The tribute he paid to his old teacher, Bennett, one of his last papers, showed clearly that he was his model, and a better it would be hard to name. The *Transactions of the Association of American Physicians*, of which he was an original member, contains a series of important papers from his pen. He was particularly interested in the subject of fevers, and there were few men in the country who had had a wider and more varied experience with typhoid fever. On dysentery and its treatment he had written at intervals for many years, and the last and most comprehensive work on the subject is to be found from his pen in a recently issued volume of *Wood's Reference Handbook*. On the whole question of intestinal diseases he was an acknowledged authority, and the articles which he contributed to *Pepper's System of Medicine* are among the most complete and scholarly in that encyclopedia.

To the very last he had the strong feeling that a man was a debtor to his profession, and amid the distractions of an unusually exacting winter he was busy working at the subject of bronchiectasis. In the persistency with which he thus kept in touch with the productive section of our guild he left an example which many of us could follow with advantage. I wish there was a general clearing house to which such men as Dr. Johnston could report, say every second or third year, a sort of central committee which might skim the cream off the experience of such men and present it to the profession. The difficulty is that the young write too much, the mature too little. There is too much green fruit sent to market, and the fruit of too many of the fine trees is never plucked at all.

In no relationship is the physician more often derelict than in his duty to himself. I do not refer so much to the sins of carelessness of health and improvidence of time which so easily beset us, nor to that self-sacrificing devotion to patients which has broken many a strong man in the full strength of his maturity. Dr. Johnston in these matters was one of the chief of sinners, as he never spared himself, but in one respect he earned the encomium "well done, good and faithful servant." There are unpleasant features about the parable of the talents, but it has an application in the life of our friend. With his environment and heredity he could have wrapped his talent in a napkin and left it quietly in the same case with his parchment, but instead he had a keen sense of responsibility, and sought the usury to be had only by study and by the laborious days and nights of the student. What gave him personally a special value was the confidence we, as a profession, felt that his experience was a genuine product, not the bastard variety which twenty-five years of practice may give to any man with an imperturbable countenance and a glib tongue. The public still follows the old saying about Drs. Maybe and Mustbe: "Remember, the young doctor may be experienced, but the old doctor must be. You take no chance with Dr. Maybe when Dr. Mustbe is in reach." Nothing can be more fallacious than the current belief that years of practice bring experience. All depends upon the type of growth, whether endogenous or exogenous. The mere accretion of facts, the daily routine of cases, is not and does not bring experience. It is the man's attitude toward these facts. The men in whom we have confidence, to whom we turn in difficulties, are those who have correlated the events of the daily round, and who have digested and assimilated mentally the raw products of experience. To do this seems (indeed, to some men it is,) an easy matter, even amid a routine of a most exacting kind; others only do it as a bounden duty. To bring out of the treasures of a full-stored mind things new and old to bear upon the individual case, to know when to act with vigor and promptness, to recognize when to hold the hand, to distinguish between

the victory of nature and the triumph of art—these were qualities of mind which increased in our friend with the growing years.

So much dies with him that the death of a man of Dr. Johnston's experience and influence is, for a time at least, an irretrievable calamity in a community. In scores of families there are aching hearts for the good physician and warm friend who had been so faithful in the hour of need, whose place may be taken, but can never be filled. Students mourn a teacher whose example was an inspiration, and who made them feel the dignity and honor of the calling of their choice. The Profession of the District of Columbia lament the loss of a man in whose position they took a pride, whose best efforts were always at their disposal and upon whom they had learned to lean as a trusted counsellor. And, speaking for a larger body, I may express the deep regret of his confreres of the Association of American Physicians, and of his colleagues, the teachers of medicine throughout the land, at the loss of so distinguished an ornament of our beloved profession.

Dr. Johnston as an Author, by WALTER REED, M. D., Major and Surgeon, U. S. Army.

I propose to confine my remarks to that side of the late Dr. Johnston's life which concerned him as an author. The time allotted, however, is so short that I can only refer very briefly to a few of his fairly numerous contributions to medical literature. I have therefore appended hereto a complete bibliography of Dr. Johnston's writings, by consulting which it may be seen that, while the author covered a fairly wide field, his most important publications relate, first, to the several types of typhoid fever, especially mild and irregular forms of this disease, and, secondly, to the various diseases of the intestinal tract.

One must read his several articles on mild typhoid fever in order to realize what a pioneer—at least in this country—Dr. Johnston was in this particular field. In his very first contribution to medical literature, published in October, 1875, when he must have been quite a young man, Dr. Johnston pointed out very clearly the difficulties which attend the recognition of the milder cases of typhoid fever due to the unlikeness which they bear to the more common and characteristic forms of the disease.

Having shown that even in severe cases certain symptoms, such as tympanites, the eruption, and the enlargement of the spleen may be absent, he took up the question of fever, which he considered to be the most constant symptom in this disease, and cited cases from his own practice to show that the fever of typhoid may be much less than was usually ascribed to that disease. Hence he emphasized the necessity for extending our views of typhoid fever so as to include many continued fevers of sub-febrile course which were overlooked or classed under other heads. In subsequent

papers he drew attention to the importance of separating mild and irregular typhoid fever, as it occurred in the city of Washington, from the malarial fevers.

In a paper presented to the American Medical Association in 1890, on "The Continued Fever of the South," Dr. Johnston said that "at the present moment there is no subject in the whole field of medical pathology which seems to me so interesting, and in the study of which so much is to be learned and so great an advance to be made." Proceeding then to consider the questions: 1. To what extent does typical enteric fever prevail throughout the South? 2. To what class do the negative, atypical forms of fever belong? 3. Has continued malarial fever or malarial fever of remittent type a very general prevalence? 4. Is the enteric fever of the South modified by malarial infection, giving rise to a hybrid disease—typho-malarial fever? he arrived at these conclusions: That enteric fever is a rare disease in the South in a typical or intense form; that a probable change is going on in the type of enteric fever; it is losing its typical character and assuming a milder form; that many cases of mild continued fever which have no well defined or characteristic symptoms are cases of mild enteric fever; that while malarial continued fevers are found in the South, many cases diagnosed as such are in reality cases of enteric fever; that there is no such hybrid disease as typho-malarial fever.

I have ventured to give somewhat at length Dr. Johnston's views on this subject, since they were of very great importance, and, as we well know, later and more accurate methods of diagnosis have fully confirmed these opinions.

There can be no question, then, that Dr. Johnston's well considered contributions did much to call the attention of physicians to the fact that many mild continued fevers were in reality cases of typhoid fever, and to the necessity of separating these from the malarial fevers. If he had written nothing else, his reputation as an author would have been secure.

Dr. Johnston's contributions to the diseases of the intestinal tract were also of much value. His earlier articles may be found in *Pepper's System of Medicine*, Vol. II, 1885; and his later papers in *Hare's System of Practical Therapeutics*, Vol. IV, 1897, and *Buck's Reference Handbook of the Medical Sciences*, Vol. III, 1901. As the time at my disposal will not permit of further reference to these, or to his important contributions on other subjects, I will only remark that the excellent paper on dysentery, which he contributed to the last-mentioned volume a few months before his death, shows the same thorough acquaintance with the literature of the subject, and the same pains-taking sifting of facts which characterized all of Dr. Johnston's writings. I may add that a careful perusal of his several contributions will show how well he could express his ideas, in language that may serve as a model of clearness and conciseness. Indeed, in reading these papers

and observing their general brevity, one is continually reminded that this distinguished physician only wrote when he felt that he had something to say, and that having said it, he was satisfied to stop.

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1901.—Aneurism of ascending aorta of great size; treatment by gelatine injections and electrolysis, with effect of coagulating most of the contained blood. *American Medicine*, Philadelphia, 1901, Vol. I, p. 251.

No date.—Synopsis of methods employed in the examination of patients for the purpose of arriving at a diagnosis. For the use of the clinical class, University Hospital, Washington, D. C.

Dr. Johnston as a Teacher, by STERLING RUFFIN, M. D.,
Washington, D. C.

Dr. William Waring Johnston lived on a high intellectual plane. His intellectual life was many-sided. To his patients and the public he was best known as the earnest physician, bending all of his energies and lending all of his great skill to the prevention of disease, the alleviation of human suffering and the saving of human life. To the members of the national legislature and to the municipal authorities of this city he was known, not only as the skillful physician, but as the able advocate of scientific sanitary reform, and the promoter of every laudable measure in the interest of public health. To the medical profession he was known, not alone as the astute diagnostician and resourceful therapist, nor yet alone as the expert sanitarian, but also as a teacher of the science and art of medicine, than whom few men have been more active or effective. It is of him as a teacher that I would especially speak.

Burdened, as he was, with the responsibilities and exacting duties of an over-busy practitioner, no part of his life was more earnestly or intelligently directed or productive of more enduring good than that large share devoted to the cause of medical education. Returning to Washington in the early winter of 1868-69, after having spent the best portion of two years in study abroad, he was eminently fitted for the work of teaching, which was to be so important a part of his life in succeeding years. The winter of 1866-67 was spent in Edinburgh, where he was in close association with the great physiologist, pathologist and clinician, John Hughes Bennett, who at that time was Professor of the Institutes of Medicine and Senior Professor of Clinical Medicine in the famous Scotch University. He was not only Bennett's clinical assistant, but his friend and guest as well. His admiration for Bennett was of an intense nature, for Bennett possessed the qualities which would naturally appeal most powerfully to a man of Dr. Johnston's mental constitution. He admired him for his accuracy and originality of thought; for his accuracy of observation; for his discipline and method as a teacher, and for his tenacity and honesty of scientific purpose. They had much in common. No wonder the younger man's admiration for the older; no wonder the friendship between the teacher and the pupil! In Dr. Bennett Dr. Johnston found his ideal as a thinker and teacher, and, consciously or unconsciously, there developed in Dr. Johnston a habit of thought and a method of teaching strikingly similar to the habit and method which he had observed in Bennett. After Dr. Bennett's death Dr. Johnston delighted to do honor to his memory. At the centennial meeting of the Medical and Chirurgical Faculty of Maryland, April 25 to 28, 1899, he paid a rare tribute to the value of his services to medicine. Read now, his eulogy of Bennett as a teacher of medicine sounds like a page taken from the record of his own life. He said of him as a clinical teacher: "The leading idea in his plan was to teach the student method—method in the correct observation of facts, and in recording them, and in the drawing of deductions from them. He taught the art of arts—that of clear thinking. The student, after the examination of the case in the presence and under the criticism of the class, was required to describe the symptoms, to define the organ affected and the nature of the lesion. From this he passed to the deduction, the diagnosis and reasons therefor.

"Precision in method and in language was insisted on. Bennett excluded everything that was unnecessary to reach a conclusion, and the histories of cases as he wrote them and taught them to be written were models of condensation. * * * The habit of using uncertain or obscure words he was especially severe upon. If the luckless student said the patient 'seemed to have a fever;' 'What,' he would say, 'has he a fever, or has he not? Seems to have means nothing.' He would grow very much excited if

the statement was made that the pulse was 'about 120.' 'It is 120, or is not,' he would exclaim; 'why do you say 'about?''' If we eliminate the element of severity and excitability possessed by Bennett, substituting for it, a gentle, calm, persistent firmness, no one at all familiar with Dr. Johnston's method of clinical teaching can fail to recognize upon the two men the same clinical stamp.

In 1871 Dr. Johnston, at the age of 28 years, fresh from his association with Bennett, aglow with enthusiasm, his professional ambition aflame, was elected to the chair of the Theory and Practice of Medicine in the Medical Department of Columbian University. He had caught the spirit of scientific medicine as opposed to the dogmatic and empirical methods of the day. His first associates in the faculty were Riley, Lincoln, Thompson, King, Fristoe and Drinkard, all familiar and honored names in the annals of the medical profession of this city. They could not have failed to realize that Dr. Johnston's native ability coupled with his magnificent training would bring increased strength to the Institution. His entrance into the faculty marked an epoch in the history of the school. From that time until his death, in all thirty-one years, he filled the chair of Theory and Practice with conspicuous ability. He last met his classes on March 6, 1902, the very day on which his fatal illness began.

As a didactic lecturer he easily stood in the first rank. His lectures were characteristic of the man—superbly concise, clear-cut, to the point, and complete—never a word too much, rarely a word too little. Above all, they were clear and methodical. Without attempt at rhetoric, without a suggestion of pedantry, without apparent effort, he possessed to a rare degree the faculty of impressiveness. His descriptions were always finished pictures, bristling with intelligence and individuality, the most important truths standing out most boldly. Important truth or principle was never clouded by unimportant fact or superfluous detail, and no student ever left his class room with vague or ill-defined impression. His manner was at all times calm, deliberate, earnest. His sense of humor was keen, but he rarely resorted to anecdote.

Early in his career as teacher he saw that, in order to teach to the best advantage the science of which he was master, the use of every scientific means must be called to his aid. As the study of practical anatomy was only possible in the dissecting room, so the learning of important parts of his branch was possible only in the laboratory. Long before the commanding position which the microscope was to occupy in modern medicine had been generally recognized, he was urging the necessity, if the processes of disease would be best understood and if the recognition of disease would be hastened and made more sure, of systematically studying with its aid normal and diseased tissues. When the science of bacteriology was in its infancy, when the profession was warring over the relation between bacteria and disease, so convinced was he of

the truthfulness and importance of the science ; so quickly did he see the proper relation between cause and effect ; so quickly did he grasp the probable significance of Koch's discoveries as applied to the causation of many diseases other than tuberculosis and cholera, and as pointing the way to rational therapeutics and scientific preventive medicine, that he was advocating the creation of the Chair of Bacteriology and the establishment of a bacteriological laboratory. Nothing delighted him more than repeated extensions of the school's laboratory facilities, for it meant to him increased opportunity for scientific teaching and the placing of his branch upon a higher and more exact plane. He could not consider as eligible for graduation a student who had fallen short in his laboratory work.

As a clinician Dr. Johnston was pre-eminent. He was never more effective or seen to better advantage than with his students in the hospital ward or amphitheater. It was here that his magnificence as a clear, accurate thinker, that the method of his thought and action, and that the extraordinary ability which he possessed of practically applying his rich store of theoretical knowledge could best be judged. The ease with which he perceived and analyzed symptoms, giving to each its proper place and weight, and the seeming lack of effort with which he drew conclusions of truth bring to mind the ease with which the expert violinist draws from his instrument its purest tones, or with which the artist adds to his canvas the lines and colors of a perfect picture. In his hands the difficult art of diagnosis seemed almost easy.

Assigning a patient to a student for examination, Bennett was never more insistent upon method and accuracy. If his students had one reason above others to be grateful to him, it was for drilling into them the necessity for *method* of thought and procedure, and for accuracy of expression. That a patient "seemed to have fever" would not do ; he did or he did not have fever. "Congestion" would not do where "inflammation" was meant. "Crepitant rales would not answer when the rales were "sub-crepitant." I have heard him say that a physician could be judged largely by the accuracy or the lack of accuracy with which he used professional terms.

He insisted at all times that examinations should be conducted in orderly, logical sequence : Family history ; personal history ; history of present illness ; present condition, under which latter, system by system was to be examined until the entire field had been covered and every finding noted. Then, with the data in hand—the diagram drawn—the conclusion was to be reached, the diagnosis made. In his own words, as applied to Bennett, he "taught the art of arts—that of clear thinking." In his criticisms he was gentle—gentleness was one of his characteristics—but he never hesitated to condemn error of method or conclusion. On

the other hand, no man was ever readier to accord praise where praise was due; and so great was the admiration and affection of his students for him that no greater reward was coveted by them than his verdict of "well done."

In the ripening experience of later years he became convinced that the most effective method of teaching was to be found in the substitution in large part of clinical for didactic methods, and year by year the didactic plan was giving way to clinical lectures and conferences. He believed that by this method, combined with recitations and laboratory instruction, intimate knowledge of disease could best be acquired. He saw in every bed in every hospital ward not only a clarity to the stricken poor, but the best possible training school for medical students and resident physicians, into whose hands and safe-keeping the lives and physical well-being of their fellow men in future years would be entrusted.

The record of Dr. Johnston's life as a teacher is:

1. Professor of the Theory and Practice of Medicine in the Medical Department of Columbian University from 1871 to the date of his death, March 21, 1902.

2. Weekly medical clinics, during each school year, at Children's Hospital from 1871, the year following its opening, to 1898, in all, twenty-seven years.

3. Weekly medical clinics, during each school year, at Columbian University Hospital from November 1, 1898, the date of its opening, to the date of his death, just stated.

*Dr. Johnston as a Clinician, by W. P. CARR, M. D.,
Washington, D. C.*

During his period of active practice Dr. Willian Waring Johnston has been connected with all the hospitals in the city except the Freedmen's and the Georgetown University Hospital. But his greatest work in this line was at the Children's Hospital, the Columbian University Hospital and the Garfield Hospital.

Drs. Busey, Ashford, Drinkard and W. W. Johnston were the first four men to suggest to a representative body of physicians and laymen the idea of a hospital devoted to the treatment of diseases of children, and largely through their efforts the Children's Hospital of the District of Columbia was incorporated December 2, 1870.

The hospital was first situated on the northeast corner of Thirteenth and F Streets, N. W. Dr. Johnston was one of the hundred and forty-two original incorporators, and was one of the first four visiting physicians. He resigned this position in 1885, when he became a member of the Consulting Staff, and one of the Board of Directors, and these appointments he held until his death. He was from the first a member of the Board of Administration, which, in 1885, was replaced by an Executive Committee of five. He

gave clinical instruction to the students of Columbian University in this hospital from 1871 to 1898, a period of eighteen years, when he changed his field of operations to the Columbian University Hospital.

In the second year of its existence the Children's Hospital had so grown that larger quarters became necessary, and these were secured at 804 E Street, N. W. During the fourth hospital year Dr. Johnston, with the other members of the Administration Committee, recommended the purchase of a suitable site and the erection of a building that would accommodate the growing needs of the institution.

This recommendation resulted in the purchase June 24, 1877, of the present site (square 272) and the erection of the present buildings, which were completed and turned over to the Board of Directors October 1, 1878. Drs. Johnston and Busey were the members of the furnishing committee and contributed laborious and efficient services in this capacity.

Dr. Johnston was also one of the founders of the Garfield Memorial Hospital and served as consulting physician on the staff of that institution from its beginning, in May, 1882, until May 14, 1897, when, owing to the action of the Board of Directors in excluding the medical staff from any voice in the practical management of the hospital and placing them in an undignified position, he resigned.

May 12, 1893, he was elected a member of the Board of Directors and consulting physician to the Emergency Hospital, and June 13, 1897, he was made one of the consulting staff of Providence Hospital, and these positions he held until his death. He was a member of the Advisory Board of Physicians and Surgeons of the Columbia Hospital for Women 1883 to 1885, and of the Board of Directors 1884-5, and consulting physician to the Washington Asylum Hospital February 27, 1900, where also he continued to serve until his death.

He was one of the consulting staff of the Episcopal Eye and Ear Hospital and the only civilian member of the consulting staff of the Government Hospital for the Insane.

In the Columbian University Hospital he took the keenest interest, and it was largely due to his efforts that this hospital came into existence November 1, 1898. He was an active member of the Staff, the Executive Committee and the Board of Governors of this institution from its beginning, and not only contributed greatly to its success, but performed the most arduous and efficient services in organizing and planning the enlarged new buildings now about to be constructed for this hospital and for the medical school of the Columbian University.

As a member of the building committee, on which Dr. De Schweinitz and myself had the pleasure of serving with him, he spared no pains nor time in his efforts to make this hospital com-

plete and excellent in every detail. Every inch of the space was carefully examined by him, and hours and weeks consumed in the consideration of the best and most efficient plans for heating, ventilating and lighting the buildings, and making them both hygienic and attractive.

Only a few hours before his death, when a newspaper containing a picture of the new building was placed in his hands, he evinced the keenest interest and pleasure, and I think nothing would have given him more delight than to have seen this work completed.

It has been the custom for centuries to erect monuments, statues, buildings or other memorials in honor of men who have contributed largely to the public benefit by charitable gifts or by valuable services. Such services rendered by the soldier or statesman, and such gifts of wealthy philanthropists are published abroad and become at once known to all and recognized at their true value. With the physician the case is different. His work is done quietly and continuously. He is taught from his earliest days to avoid notoriety as beneath the dignity of his calling. The spirit of Hippocrates is still with him and bids him refrain from all boasting or exploiting of his work or his successes. His code of ethics, as well as his modesty, forbid his advertising his abilities in any way except by demonstrations or lectures to his fellow physicians.

The true physician is always modest and always a gentleman. Boastfulness and publicity are abhorrent to him and he needs no code to check his thirst for notoriety. Dr. Johnston was a true physician in every sense of the word. Half of his life was given to charitable work, of which little is known even to his fellow workers. It is only by gathering it up a little here and a little there that we can get together the grand total and view it in its entirety.

The time he has spent in charitable work in hospitals and out of hospitals would give, at a low estimate, a pecuniary value of many hundreds of thousands of dollars. I should say, at a rough estimate, to at least a million dollars.

In hospital wards he personally directed and supervised the treatment of an average of fifty patients a day for 30 years, or, in other words, he gave to charity, at a very low estimate, \$100 a day or over a million dollars in the 30 years of his active career.

But services of such a character cannot be estimated in terms of dollars and cents. Life may have a pecuniary value in the courts and suffering may be compensated by money in the eyes of the law, but few of us would be willing to give up the one or endure the other for value received, even at rates a hundred times greater than those usually fixed by juries.

The men who have given an equivalent of a million to their suffering fellows are not numerous, and they may justly feel that they have not lived in vain. Many of them have proud monu-

ments erected to their memories, but few indeed deserve them more than the man who has, in addition, made it his daily habit to save life and relieve suffering, not for one or two, but for many. I have often wondered what it was that impelled Dr. Johnston to work so continuously, so indefatigably, and withal, so cheerfully, for the poor as well as for the rich. I believe it was his innate nobility, another illustration of the old motto, "*Noblesse oblige.*"

Dr. Johnston as a Citizen, by GEORGE M. KOBER, M. D.,
Washington, D. C.

By the death of William Waring Johnston the medical profession has indeed lost a leader in scientific medicine and higher medical education, and the community not only an ideal physician, but also a public-spirited citizen, one who was ever active in promoting the sanitary welfare of his native city.

Men who come in daily contact with sickness and distress, who face the fury of a midnight storm and the invisible foes of infectious diseases, speaking words of comfort and alleviating human suffering, cannot fail to experience deep sympathy for their fellow-men, which is all the more profound when they realize that many of the diseases are preventable, and much of this terrible suffering cruelly unnecessary.

These tender feelings, inspired by a service to humanity, have stimulated into existence a science which has for its object not only the promotion and preservation of health, but also the prevention of disease. Indeed, the eradication of preventable diseases is the highest aim of scientific medicine to-day. It is a plant divinely nursed, fed by brotherly love, from which it rose at first.

"Love thou thy neighbor with love far brought
From out the storied past and used
Within the present, but transfused
Through future time by power of thought."

It is not surprising that a man of Dr. Johnston's type, who was confessedly a leader in his profession and capable of the tenderest emotions and the exercise of the highest attributes of good citizenship, should also become a leader in the crusade against preventable diseases. He realized many years ago that the undue prevalence of typhoid fever in the District of Columbia was due to a polluted water supply and defective sewerage system, but unwilling to enunciate such a conclusion without a systematic investigation, he agreed to be a member of a committee of the Medical Society, and, with the assistance of Dr. Magruder and others, collected facts which formed the basis of one of the most valuable contributions to the sanitary history of the National Capital.

Appreciating, as he did, the imperative necessity of an improved water-supply and the extension and completion of the drainage

system, he lost no opportunity in educating the public and legislators in this direction. His position as Chairman of the Committee on Public Health of the Board of Trade, and as a member of the Legislative Committee of the Medical Society, afforded unusual opportunities. His numerous public addresses and reports, many of which are masterpieces of sanitary acumen, bear evidence of his painstaking and exact methods. All of his facts were collected with the utmost care, and presented in a concise, logical and convincing manner. He was a clear, forceful writer and speaker, but withal extremely modest and from mean self-interest and ambition clear. I shall never forget his quiet but decided voice when he addressed a Congressional committee in February, 1901, on the subject of sand filtration, and said:

"The problem that we have to deal with particularly is to prevent typhoid fever in Washington. It is a terrible disease. It is a disease which will kill your child or my child, and it is a disease that we must stop if we can. Now it has been stopped, it has been almost eradicated in certain cities by purification of the water supply, and the results are enormously in favor of the natural method of sand filtration, and the question it seems to me for you to decide is: Are you going to try a filter that has proved to be successful in the reduction of this mortality, or are you going to try a filter that has never been used on a large scale?"

In a like careful manner he studied the prevalence and distribution of malarial fevers in the District, and his collection of facts pointed clearly to the Anacostia flats and other low lands as the most potent factors in the causation of this disease, and although his recommendations for the reclamation of these marshes have been frequent and urgent, it will be years before his labors will be fruitful.

His efforts were not directed to these problems alone, but also to other matters bearing upon the physical welfare of the human race. So, for example, he was fully aware that the mental and physical vigor of a nation depends upon the environments of childhood and youth, when the whole organism is plastic and especially susceptible to external and internal impressions, and in 1899 in a most thoughtful address he pointed out the influence of school life upon the health of children, the increase of disease with increase of the number of hours of study, the evil effects of premature school life upon the nervous system, and many other important topics, and as a remedy suggested the fixing of eight years as the proper age to begin school instruction instead of four to six, and a demand for proper medical certification as to the fitness, mental and physical, of each child who seeks admission to the schools. He has been for years a zealous advocate of medical inspections of schools in order to limit the spread of contagious diseases, and last December presented a most conclusive argument in favor of such inspections under the supervision of the

Health Officer. As Chairman of the Executive Committee during the last three months alone, his graceful pen indited or edited ten reports on important legislative matters, and it can be safely asserted that no important sanitary legislation has been enacted during the past ten years that did not bear the imprint of his fertile mind. Only a few days before his fatal illness he addressed the annual meeting of the Instructive Visiting Nurse Society, and emphasized the fact that this society not only provides trained nurses to visit and nurse the poor in their homes and to instruct them in the care of their sick, but also occupies an equally philanthropic field in the prevention of disease by the dissemination of useful knowledge through these nurses. Whoever takes up his numerous reports, replete with facts and details, and recalls his activity in all questions relating to public health, cannot fail to recognize that all these efforts involved much physical and mental wear and tear and herein lies the greatness and heroic devotion of our departed friend. For many years his practice was as large as he chose to make it, and his literary, scientific and committee work had to be done during the hours between ten and one o'clock at night, which should have been devoted to rest.

Did he realize that he was overworked? Yes, for the man who wrote only a year ago the able essay on the ill health of Charles Darwin, its snature and its relation to his work, knew full well that he himself was overleaping his natural powers, and, although he had a son who could have lightened his labors, he preferred that he should enjoy the opportunity to broaden the scope of his training, because, as he expressed it, the demands of modern medicine are so exacting.

Just one year ago last night we met in this hall to pay our last tribute of respect to the memory of our lamented Dr. Busey. The loss of two such men to the community is indeed irreparable. Dr. Johnston's death, however, is especially pathetic, because he succumbed before his course was fairly run; but he has gone to receive the reward of a true physician and citizen, and the community is better for having known him.

"I cannot say and I will not say
That he is dead; he is just away.
Soft and peaceful be his slumbers;
Farewell—*Auf wiedersehen!*"

Editorial in the WASHINGTON POST, April 13, 1902.

THE LESSON OF A DOCTOR'S LIFE.

The extraordinary spectacle witnessed in this city a few days ago, when two largely attended meetings were held to commemorate the worth of a physician who had died must have impressed

all thoughtful persons. Here was a man who had made no pretensions to what are commonly termed goodness and greatness, who followed his calling as other men follow theirs, for a livelihood, and yet who so stamped himself upon the minds and hearts of his fellow-citizens that with one impulse both his professional associates and all the multitude of laymen to whose relief he had ministered joined in public demonstrations in his honor.

Physicians come and go, patients survive and die. What is it that here and there singles out one healer for especial popular love and devotion, and which warms those emotions into visible activity, as distinguished from the thousand examples of the relation of physician and patient severed by death with but a passing pang? It is a faculty which we call enthusiasm. Some men have it naturally, and can no more escape its promptings than they can avoid hunger after fasting or weariness after a physical strain. But all enthusiasm is not of the same character. The enthusiasm of the ordinary scientist, pursuing his investigations into this and that mystery of nature, may stimulate the admiration of his colleagues of the laboratory, or win him everlasting fame when the history of his research is written, but it does not necessarily capture the affections of those who daily touch elbows with him. There must be something more than this—an enthusiasm of humanity—an eagerness for accomplishment which has behind it an impulse to reduce the suffering of one stricken man or woman, and not merely an abstract zest for victory over a troublesome problem.

That trait it is which appeals to everybody, consciously or unconsciously. Indeed, through the subtle freemasonry of sympathy, the knowledge of it extends to thousands of persons who never actually enjoyed the acquaintance of its possessor. They have learned to know him through his work, and through the sort of praise which they hear sung on all sides—with no perfunctory note in it, but fairly welling up from the hearts of the singers. The most eminent physicians not infrequently lack the peculiar quality which binds a group of men to one. A less noted practitioner who has that quality may leave a much larger void in the world when he passes out of it. Men do not speak of him, after he is gone, as a philanthropist or an expert. They know him only as the big-hearted, brave, indomitable champion, who, in their defense, has fought through sleepless days and nights, hand-to-hand with death—hoping, working, struggling, refusing still to give up one inch of ground, though all others have retired in discouragement.

The patient whom such a physician has rescued from the verge of the grave has no comment to make upon his school or his methods. Petty questions of ways and means and etiquette fade into shadows in the presence of the main result. Other physicians may have "cured" him when he has been ill, or "success-

fully treated" him in temporary emergencies; but this one has "pulled him through!" There is a world of eloquence in the very form of words used to describe the triumph of one of these forlorn-hope heroes in the healing art.

The physician with this kind of a reputation usually stamps upon it the last grand seal of sacrifice, giving up his own life for his neighbor's in the end. It may be that a single hard-fought case takes more vitality out of him than he can restore; or the dissipation of his strength may extend over a long period, but be so gradual that even he does not realize it till too late. In either event, he pays the price of his enthusiasm cheerfully. In his eyes, life would not have been worth the living with this savor of exertion and hazard left out of it. It would surprise him to be told on his deathbed that great assemblages would presently gather to read with tear-dimmed eyes the lesson of deep meaning written between the lines of his career. He is not aware of having earned so notable a tribute. He has done nothing from a conscious sense of duty; all his service to his kind has been inspired by the pure joy of its performance.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, February 19, 1902.—The President, Dr. S. S. Adams, in the Chair. Over 53 members and some visitors present.

A report from the Executive Committee in regard to "prize essay" was read and adopted. See page 145.

The President read the names of those who had subscribed to the prize essay fund. He explained that other members also wished to subscribe, but after the required amount had been secured offers of further contributions were declined. The list was as follows: Drs. S. S. Adams, W. G. Morgan, T. M. Murray, H. L. E. Johnson, Franck Hyatt, G. W. Cook, G. M. Kober, J. H. Bryan, W. H. Wilmer, J. T. Johnson, J. T. Winter, T. N. McLaughlin, J. D. Morgan, W. M. Sprigg, W. W. Johnston, I. S. Stone, G. N. Acker, C. W. Richardson, W. C. Woodward, Z. T. Sowers, A. F. A. King, T. C. Smith, L. L. Friedrich, S. O. Richey and E. A. Balloch.

A report from the Executive Committee upon the recommendations contained in the report of the Editing Committee of 1902 relative to the publication of a periodical was read and adopted. See page 146.

Dr. W. W. Johnston, for the Executive Committee, read a letter to the Commissioners of the District of Columbia, which had been prepared by the committee, and which set forth their views concerning the recommendations contained in the recent communication of the Board of Charities relative to the management of the

proposed Municipal Hospital. The Society authorized the Committee to send the letter to the Commissioners. See page 147.

Dr. J. Ford Thompson presented a case and specimen of Stricture of the Oesophagus. Discussed by Drs. Jung and Balloch. See page 116.

Dr. Franzoni exhibited skiagraphs illustrating Fracture of the Leg, supplemental to his exhibit at the previous meeting. See page 114.

The discussion of Dr. Kober's paper on the Causation of Disease was continued by Drs. J. E. Walsh, McGuire, F. P. Morgan, Hooe, Parsons, A. F. A. King, Wm. Ward and W. W. Johnston. See the March number, p. 41.

Wednesday, February 26, 1902.—The President, Dr. S. S. Adams, in the chair. Over 70 members present and some visitors.

The Corresponding Secretary turned over to the Society a deed of trust, dated 1870, by which the Society had deeded certain property to Dr. S. C. Busey and others. The Recording Secretary was instructed to record in the minutes the transfer of the document, and have it bound in the official typewritten volume of transactions.

Dr. Chappell, for the Committee on Public Health, reported on the advisability of placing methyl alcohol on the list of poisons. The report was adopted. See page 150.

Dr. Chappell also stated that the Committee would soon begin an investigation to determine the best methods of preventing the spread of the minor contagious diseases.

A letter was read from the Librarian of the Surgeon General's Office thanking the Society for its recent donation of seventy-three books and pamphlets.

Dr. V. P. Gibney, of New York, read the paper of the evening, "The Diagnosis and Management of Some of the More Common Diseases of the Knee Joint in Adults." Discussed by Drs. W. P. Carr, J. Ford Thompson, F. R. Hagner, Shands, Glazebrook, Jas. Stuart and Ramsburgh. See page 93.

Wednesday, March 5, 1902.—The President, Dr. S. S. Adams, in the chair. Over 52 members and some visitors present.

The Executive Committee presented a report on miscellaneous matters. See page 149. Nos. 1 and 2 were adopted. The consideration of No. 3 was postponed until the next stated meeting. The President decided that No. 4 was a violation of the constitution. The 5th and 6th recommendations were adopted. The 7th was withdrawn. The 8th was adopted.

Dr. Hasbrouck gave a demonstration of the production of Anaesthesia by Nitrous Oxide and Ether. Discussed by Drs. Bryan, Reyburn, Vaughan, King, Fry and S. S. Adams. See page 118.

Dr. McArdle read the essay for the month, "Bronchiectasis." Discussed by Drs. Wells, Hardin, Claytor and Vaughan.

Wednesday, March 12, 1902.—The President, Dr. S. S. Adams, in the chair. Over 34 members present.

Dr. I. W. Blackburn presented a specimen of complete Transposition of the Viscera. Discussed by Drs. Frank Baker, D. S. Lamb and Neff. See page 125.

Dr. G. W. Wood read a paper entitled, "Two Peculiar Complications of Labor." Discussed by Drs. T. C. Smith, W. Sinclair Bowen, E. F. King and A. Behrend. See page 122.

Wednesday, March 19, 1902.—The President, Dr. S. S. Adams, in the chair. Over 38 members present.

Dr. Magruder called attention to the fact that the appropriation for installing the filtration plant had been exhausted, and unless something was done by Congress the work would probably be delayed until August. He therefore moved that the Vice-Chairman of the Executive Committee be instructed to call the attention of Congress to the condition of the Potomac water, and to ask that an appropriation be made available so that the work could proceed without interruption. The motion was carried.

Dr. E. F. King read a paper on, "Castration, Prostatectomy, Bottini: Which?" Discussed by Drs. Balloch, Snyder, Van Rensselaer and J. Ford Thompson. See page 133.

Dr. S. S. Adams presented two case-histories of Tumor of the Brain, and exhibited one of the patients. [To be published.]

Wednesday, March 26, 1902.—The President, Dr. S. S. Adams, in the chair. Over 51 members present.

Dr. D. S. Lamb presented a case and specimen: "Hydrocephalus." See page 144.

Dr. Robert Fletcher read the paper of the evening, "Some Diseases Bearing the Names of Saints."

Special meeting in memory of Dr. W. W. Johnston, Monday, March 24, 1902.—The President, Dr. S. S. Adams, in the chair. Over 77 members present.

The President, with deep regret, announced the death of Dr. W. W. Johnston.

On motion of Dr. Fry, a committee of five was appointed by the President to prepare suitable resolutions: Drs. Fry, J. Ford Thompson, A. F. A. King, Kober and Woodward.

The committee reported the resolutions, which, on motion of Dr. Nichols, were unanimously adopted. See page 151.

Dr. Woodward, with appropriate remarks, moved that a committee of five be appointed to make arrangements for a Memorial meeting to be held on April 9th. The motion carried, and the President appointed the same members.

Editorial.

ADVERTISEMENTS AND SUBSCRIPTIONS.

The Editorial Committee would be pleased to have the members of the Society interest themselves (as some have already done) in procuring advertisements and subscriptions. Dr. Jackson has charge of advertisements, and will furnish any desired information. Dr. Wells has charge of subscriptions; the rate is one dollar a year, postage paid.

The Committee would especially bespeak for the advertisers the patronage of members, other things, of course, being equal.

Medical Miscellany.

The Episcopal Eye, Ear and Throat Hospital.—The work continues to increase at a phenomenal rate. During the months of January, February, March and April 5,118 visits were made to the Hospital by 1,261 patients, and 242 operations were performed. The latter include 23 operations for adenoids, 15 for cataracts, 8 on the mastoid, 4 for deflected septa, 3 for ethmoiditis, 3 for frontal sinusitis, 3 enucleations of the eye ball, 1 exenteration of the orbital contents and excision of the lid for sarcoma, 1 antrum operation, 1 cleft palate, 1 tracheotomy. From 75 to 80 patients are treated daily in the dispensary, and the need for the new hospital is growing urgent. The lot purchased less than a year ago has been entirely paid for, and the erection of a large modern hospital will be begun as soon as the necessary funds are at hand.

The Medical Board is as follows : *President*, Dr. Henry D. Fry ; *Secretary*, Dr. E. Oliver Belt ; *Consulting Physicians*, Drs. George N. Acker, J. W. Bayne, G. Wythe Cook, Henry D. Fry, J. Taber Johnson, J. Ford Thompson ; *Attending Physicians*, Drs. E. Oliver Belt, J. H. Bryan, William H. Fox, Franck Hyatt, C. W. Richardson, William H. Wilmer ; *Assistant Attending Physicians*, Drs. H. S. Dye, L. S. Greene, M. Griffith, O. A. M. McKimmie, H. A. Polkinhorn, J. J. Richardson, W. N. Suter, Walter A. Wells, Maurice E. Miller ; *Pathologist*, Dr. J. B. Nichols ; *Superintendent*, Miss Eva Simonton ; *Assistant Nurse*, Miss Susan H. Higgins.

E. O. BELT.

The Eastern Dispensary and Casualty Hospital, Washington, D. C., located at 217 Delaware Avenue, N. E., is incorporated. Supported by a small appropriation from Congress, and by private subscriptions. Is thoroughly equipped for treating emergency cases, and also for the various outdoor patients. It is under the management of a Board of Directors, of which Mr. Thos. W. Smith is President. The medical staff is composed of Drs. L. K. Beatty, diseases of women ; D. O. Leech, general medicine ; C. R. Dufour, diseases of eye ; N. P. Barnes, diseases of children ; G. C. Clark, skin diseases ; Jesse Shoup, diseases of throat, nose and chest ; Mrs. Hullfish, matron ; Dr. Freeman, resident, and Mr. Jones, assistant.

The institution is of great value to the sick and injured in the eastern section of the city. The report for the last month is as follows : Emergency cases treated, 74 ; operations, 34 ; patients

sent to wards, 21; deaths, 1. Dispensary report: New cases, 202; revisits, 421; surgical operations, 4; prescriptions compounded, 686.

C. R. DUFOUR.

Government Hospital for the Insane.—THE TRAINING SCHOOL INSTRUCTION AND HOSPITAL NURSING.—The school is under the charge of a chief, a woman graduate of a training school of a general hospital and with several years experience in the care of the insane. The course covers a period of two sessions, each lasting from October 1 to June 1. Weekly recitations are given by the chief of the school to the junior class from Week's Text Book on Nursing.

A lecture is given each week by a member of the medical staff of the hospital, the different subjects being divided among the several members of the staff. The chief of the school attends these lectures with the class. The members of the class are required to take notes of the lectures, write them out later and submit them to the chief for criticism, explanation and correction.

To the junior class four lectures are given on anatomy, four on physiology, three on chemistry, three on materia medica, three on bandaging, local applications and surgical dressings, two on what to observe and report to the physician, four on bacteriology, four on mental disease and three are devoted to general review.

The senior class has five lectures on materia medica, medical chemistry and urinalysis, four on regional anatomy, four on physiology, four on bacteriology and hygiene, three on surgery, four on hydrotherapy, massage and electricity, three on pathology and three on mental diseases. An examination is held in each subject at the close of the series of lectures, and an average of 70 is required in each. Weekly quizzes are held by the physicians on most of the subjects and the instruction is made as practical as possible. No attempt is made to teach the subjects as these are taught to medical students, but simply to give such parts as may be of use to the students as nurses. Everything is made as simple as possible and the use of technical terms avoided as far as consistent with the ends desired. In materia medica the most important medicines are taken, and by sight, handling and use the students are familiarized with them. The study of anatomy is chiefly limited to regional anatomy and the structure of the principal organs of the body. In physiology such practical subjects as digestion, blood formation and circulation, respiration and excretion are given prominence. The bacteriological course comprises a review of the simplest classification of bacteria, the nature of those found in disease, the things to be watched in the diseases in which they are found, how they are disseminated, and such parts of the subject in general as the nurse should know and may reasonably be expected to understand. The study of hydrotherapy, massage and electricity is entirely practical. A

patient dressed in trunks is brought before the class, and each member is shown the various movements of massage, the different methods of bathing, and, as far as practicable, is required to practice the various movements under the eye of the instructor. The same is true of bandaging and local dressings.

The entire Hospital is divided into five departments with a senior medical officer in charge of each. Four of them have a female head nurse in charge of each. This nurse is a graduate of several years standing. She has immediate charge of all the sick in that department, and of all acute cases. She gives special bedside instruction to the nurses of the school in all that pertain to their duties in the sick wards. These nurses, as far as practicable, are given periods of three months service each in the receiving ward and the hospital ward proper, the infirmary, the ward for disturbed cases, with the convalescent, and on night duty. They are required to make careful notes of all sick and all special acute cases, to dress all sores, wounds and fractures, to properly handle patients in bed, to give hypodermic injections, enemata, baths, massage, to record pulse, temperature, respiration and actions of bowels and kidneys, to describe the mental condition of the patient, the way in which he occupies his time, and every accident that occurs. About twelve graduate female nurses, or those in the senior class, are employed in the male hospital and infirmary wards. These have especial charge of the nursing care of the patients. Each department of the Hospital, as above described, has an office in the hospital ward, which is equipped with appliances for surgical dressing, minor surgery, etc., and a cabinet with the usual medicines required. Most of the medicines prescribed are kept here, and many of them are compounded by the nurses. All medicines are administered under the direction of the head nurse of the ward.

During the course lectures are given the female nurses in cooking by the dietitian, who has charge of the entire sick diet of the hospital wards, and who has herself taken a full course of instruction in a cooking school of recognized standing.

Throughout the course the importance of the moral treatment of the insane is made prominent, and the nurses are taught to consider all these means as only adjuncts to the constant efforts which the nurse should make to direct aright, and to guide into normal channels the activities of the patients in his charge.

To sum up, the influence of the course of training has been here, as I believe it is universally found to be, markedly beneficial. I desire especially to commend the service of the female nurses in the male wards. There has been a very decided change for the better in these wards. There is an increased appearance of neatness of both patients and beds; there are less frequent complaints and a greater degree of contentment among the patients. Great care, of course, is used in selecting these nurses, but the results

thus far have been surprising even to ourselves in the readiness with which the nurses adapt themselves to the work and the little that we find in any manner objectionable in the conduct of patients toward them. It also increases the confidence of the friends of patients. How far this service can be extended we have not yet fully demonstrated. In a general way the female head nurses, before referred to, have a general charge of the entire hospital service in all the wards for the acute and chronic sick, and for many of the feeble classes. Female nurses are actually present constantly in eight hospital wards. Male nurses and male attendants are also on duty in these wards, but the responsibility for the nursing, care of the patients, the record of notes and the administration of remedies is primarily with the female nurses. We find their presence in these wards of advantage in many ways, and thus far we have not discovered any disadvantages. One of these hospital wards is also a receiving ward, and in it we have three female nurses, two male nurses and a dining-room attendant.

How far it will be practicable to introduce female nurses in the general wards for the care of the able-bodied chronic cases, is yet untested, and I have doubts as to its adaptability for these classes. I do believe, however, that for all acute and curable cases, the introduction of one or two discreet, intelligent and trained female nurses into each ward, more particularly for the moral treatment of the patients and the general supervision of their medical treatment, is of decided advantage and entirely feasible.

A. B. RICHARDSON.

U. S. Fish Commission.—ANIMAL PARASITISM IN SUNFISH.—The Fish Commission in March had a few cases of mortality among sunfish in the aquaria at the Charleston Exposition. The species is *lepomis pallidus*, the common blue-gill or bream, and the fishes were from local South Carolina waters. Parasitic colorless cysts were numerous in the liver of each specimen and in the kidney of one, and in such numbers that they are probably to be regarded as the cause of death. Substantially the same cysts, but white instead of colorless, were found clinging to the ectal surface of the heart. The parasite has not been determined, but a cursory examination indicates that it is a cestode. These Charleston fish did not acquire it in captivity, and its chief interest lies in its probable relation to moderate epidemics which occur each year in the spring or summer among sunfish, basses, and other species of our fresh waters, and in the question of an intermediate host. This species, with other sunfishes, is not the subject of fish cultural operations to any extent, but is of some commercial importance, and, containing the parasite, must often reach the markets and the consumer. Its visceral location and thorough cooking probably prevent it from becoming of importance in human medicine.

M. C. MARSH.

The Columbian University.—MEDICAL DEPARTMENT, 1325 H ST., N. W.—THE UNIVERSITY HOSPITAL, 1335 H ST., N. W.—Work is progressing rapidly on the new buildings for the Columbian Medical School and Hospital. The structures will be handsome fireproof buildings with commodious lecture rooms, excellent laboratories and all the equipment for practical work demanded for modern medical education. The Hospital will be a model for neatness and comfort, heated in the winter, cooled in the summer, ventilated in the most approved manner. These improvements will offer every facility for medical students and for the practitioners of the city.

E. A. DE SCHWEINITZ.

Howard University, Medical Department and Hospital.—At its recent commencement this Department graduated the largest class in its history, there being 51 in all branches. One of the graduating class, Dr. Anna Bartsch, has already secured, by competitive examination, an internship in the Philadelphia Maternity Hospital, standing second in a list of seven.

At the last examination by the Virginia Board, December 16–19, 1901, 53 candidates were passed. The six highest marks were : 1—Johns Hopkins, 89 ; 2 to 4—University of Virginia, 88, 88, 87 ; 5—Jefferson, 86 ; 6—Howard, 84.

There have been many cases of interest recently in the hospital. One case of *appendicitis*, admitted on the fifth day, and immediately operated on, showed extensive gangrene of the appendix and cecum. The patient recovered under drainage with a fecal fistula, which is rapidly closing. Another case exemplifies the observation recently made by Richardson (*Boston Medical and Surgical Journal*, April 17, 1902), that many cases of *pneumonia* present abdominal symptoms simulating *appendicitis*. A boy, 8 years old, was admitted April 11, 1902, with a history of sudden pain in abdomen, vomiting and general abdominal distress. When admitted there was pain over entire abdomen, worse in right lower quadrant, jaundice, fever and frequent pulse ; liver enlarged and tender ; dullness over lower half right lung ; some cough. The symptoms pointing strongly to hepatic abscess, an exploratory incision was made ; the liver was found normal, as was also the appendix. The abdominal wound healed promptly, but the consolidation of lung extended and resulted fatally about a week after operation. The autopsy showed *pneumonia*, with catarrhal jaundice. 3. An adult man was admitted to the surgical ward with *separation of the recti muscles*, extending from ensiform cartilage nearly to navel. There was a small ventral hernia two inches above the navel. The hernial opening was closed, and the muscles brought together by strong sutures through the fascia (after it had been loosened) with a very successful result. 4. A white girl was admitted to the children's ward January 26, 1902, with lobar

pneumonia. On February 2 she broke out with an eruption, which proved to be *chicken pox*. She made a perfect recovery from both diseases.

E. A. BALLOCH.

U. S. Department of Agriculture ; Division of Entomology.—

RECENT MOSQUITO NOTES.—The New Jersey State Legislature before adjourning passed a bill authorizing an investigation of the New Jersey mosquitoes by the State Entomologist, Dr. John B. Smith, of Rutgers College of New Jersey, the purpose being to bring about remedial measures which should relieve the State from malaria and from the economic burden of its traditional mosquito supply. Dr. Smith asked for an appropriation of \$10,000 to accompany the authorization, but no appropriation was made. The Governor of the State, however, promises to aid Dr. Smith's work from the emergency funds at his disposal.

Dr. Harrison G. Dyar has just published an interesting series of "Notes on Mosquitoes on Long Island, New York," in the *Proceedings of the Entomological Society of Washington*, vol. V, page 1, author's extra, published April 28, 1902. Curiously enough, he records the fact that *Anopheles crucians*, hitherto considered as a distinctively southern species, and occurring most abundantly in the Gulf States, was the commonest *Anopheles* in his house at Bellport, Long Island, last summer. The larvae of *Anopheles punctipennis* he found in a rain puddle by the side of the road, and those of *Anopheles maculipennis* were found more or less commonly in nearly every pool and pond, and even in the blacksmith's rain-water barrel. A few were found along stagnant margins of swiftly-flowing streams.

In Bulletin 96 of the Kentucky Agricultural Experiment Station Professor H. Garman has an article on "Dangerous Mosquitoes in Kentucky" showing that *Anopheles punctipennis* and *A. maculipennis* occur commonly in Kentucky, while the yellow fever mosquito (*Stegomyia fasciata*) has been known to him in Kentucky since 1889. It is a house-infesting mosquito, being found in dwellings at all times during the summer, and probably hibernating in the dwellings at Lexington and in other Kentucky towns. This species is probably commonly brought north every year from the far south in compartment cars and in staterooms of steamboats.

An article entitled "Dengue: A Study of its Mode of Propagation and Pathology," by Dr. Horace Graham, of the American College of Beyruth, Syria, published in the *Medical Record* for February 8, 1902, is extremely interesting as apparently showing authoritatively that dengue is carried by mosquitoes of the genus *Culex*. The particular species of mosquito does not seem to have been determined, but the author states that it is a *Culex*. It is quite probable that Dr. Graham is able to distinguish the different genera of mosquitoes, but if it proves to be true that *Culex* carries

dengue it will be a most interesting discovery from the entomological side, since, although *Culex* is known to carry filaria, it has not hitherto been found to serve as a secondary host for any of the pathogenic sporozoa.

Among the interesting mosquito sendings received at my office recently are *Stegomyia fasciata*, from Iligan, Mindanao, Philippine Islands, from Dr. F. P. Grubbs, and the same species from Hilo, Hawaii, from Mr. H. W. Henshaw. Prof. T. D. A. Cockerell has sent me from Tempe, Ariz., what is probably the hitherto undescribed larva of *Anopheles crucians*, which was found in side pools along the Salt River.

L. O. HOWARD.

Army Medical Museum.—OPHTHALMOSCOPES.—At the 1901 meeting of the American Medical Association there was a historical exhibit of ophthalmoscopes (see *Jour. Amer. Med. Asso.*, March 1, 1902). The exhibit was prepared by Dr. Harry Friedenwald, of Baltimore, Md. Some of the instruments exhibited were afterward donated to this Museum, and the series is now being arranged in an approximately chronological order with short historical statements. It is desirable that this series should be as complete as possible. So far it includes a Helmholtz of original design, a Ruete, Zehender, Burow, Stellwag, Desmarres, Follin, Cusco stationary, small Liebreich, Laurence binocular, Coccious, Girard-Teulon binocular, Carter, Landolt, Loring, Morton, Oldham, Parent, Beale, Fox, Knapp, Landré, Robertson, Hirschberg.

The Museum would like to get others, either by donation or purchase, as the Abbate autophthalmoscope, Adams, Anagnostakis, Badal, Baumeister, Brailey, Burchard, Burnett, Burke, Callan, Cohn, Courserrant, Couper, Deval, Down, Dudley, Engelhardt, Epkens-Donders, Foerster, Froebeli, Galezowski, Graefe, Grandmont, Grossman, Haab, Hasner, Harlan, Hart, Heyfeldt, Heymann, Horstmann, Hogg, Howe, Javal, Jessop, Juler, Keyser, Kilbourn, Klaunig, Lang, Lyder-Borthen, Loiseau, Maher, Meyer, Meyerstein, Monoyer, Nettleship, Noyes, Panas, Peppenmueller, Perrin, Poncet, Purves, Roth, Rosebrugh, Schnabel, Schneller, Schoeler, Schweigger, Saemann, Sichel, Shakspeare, Soleil, Thorner, Ulrich, Wecker, Williams, and others.

D. S. LAMB.

Washington Asylum Hospital.—TRAINING SCHOOL FOR NURSES.—The Washington Training School for Nurses was incorporated December 14, 1877, began its first lecture course at once, and was continued without interruption until 1894, when it was evident that continuous practical hospital training was essential for the instruction of the nurses, and as such practical training was not feasible at that time, the school suspended its sessions until 1898. An agreement was then made between the officers in charge of the Emergency Hospital and the Washington Asylum

Hospital and the Washington Training School for Nurses, as a result of which pupil nurses were received at the Washington Asylum Hospital, to remain there under instruction for two years, and then were transferred to the Emergency Hospital to continue their course one year longer. All instruction and lectures were under the direction and supervision of the Washington Training School for Nurses, and at the completion of the three years' course, and by passing the necessary examinations, a diploma was conferred on each student fulfilling the necessary requirements. Lectures were promptly resumed, and the curriculum enlarged so as to include all the modern branches appertaining to nursing, making one of the most complete courses of training possible. Misses Kate Johnstone and Harriet Wright Lafferty, of the District of Columbia; Amelia Laurason, of North Carolina; Mary Lewis, of Pennsylvania, and Kate Olivia Smith, of West Virginia, received their diplomas from Col. Henry F. Blount, the President of the Washington Training School for Nurses, at the Columbian University, Monday, May 26, 1902. The class was especially fortunate in having the great privilege of listening to the able lectures of Dr. W. W. Johnston. D. P. HICKLING.

Medical Society of the District of Columbia.

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*1819—Spence, John T.....	Virginia.

* Deceased.

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Miscellaneous.

Dr. Frank Baker.....	1728 Columbia Road.
" I. W. Blackburn.....	St. Elizabeth Asylum.
" James Carroll.....	Army Medical Museum.

* Deceased.

Dr. C. F. Dawson.....	Bureau Animal Industry.
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* Members are requested to report errors in name or address to the Editorial Committee.

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Dye, Hobart S.....	1404 L street, n. w.
Eliot, Johnson.....	718 H street, n. e.
Eliot, Llewellyn.....	1106 P street, n. w.
Erbach, Amelia.....	709 East Capitol street.
Evans, Warwick.....	1105 9th street, n. w.
Fenwick, George Philip.....	504 6th street, s. w.
Ferguson, Charles E.....	1218 12th street, n. w.
Filler, Charles W.....	1707 Q street, n. w.
Forsythe, A. D.....	1330 9th street, n. w.
Fowler, Ernest W.....	Kendall Green.
Fowler, William C.....	1141 5th street, n. w.
Fox, William Henry.....	1138 Connecticut avenue, n. w.
Foye, A. Frances.....	1342 Q street, n. w.
Franzoni, Charles William.....	605 I street, n. w.
French, William B.....	506 East Capitol street.
Friedrich, Leon L.....	329 East Capitol street.
Fry, Henry D.....	1601 Connecticut avenue, n. w.
Gallagher, Michael F.....	802 Mount Vernon Place.
Gibson, Frank E.....	927 I street, n. w.
Gill, William T.....	442 M street, n. w.
Glazebrook, L. W.....	2022 P street, n. w.
Gleeson, James K. P.....	1316 R street, n. w.
Graham, Neil F.....	909 New York avenue, n. w.
Greene, Samuel H., Jr.....	1320 Q street, n. w.
Griffith, M.....	1013 14th street, n. w.
Hagner, Francis R.....	1717 N street, n. w.
Hall, Arthur Joseph.....	811 13th street, n. w.
Hammett, C. M., Jr.....	1328 New York avenue, n. w.
Hammond, Thomas V.....	1713 H street, n. w.
Hardin, B. L.....	1132 Connecticut avenue, n. w.
Harding, Harry T.....	2650 14th street, n. w.
Hasbrouck, Edwin M.....	2422 14th street, n. w.
Hawkes, William H.....	1317 Columbia Road, n. w.
Heger, Anthony.....	2026 Hillier Place, n. w.
Heiberger, Ida J.....	722 18th street, n. w.
Heinecke, George B.....	804 11th street, n. w.
Henderson, George.....	817 T street, n. w.
Herbert, Joseph Wells.....	205 H street, n. w.
Hickling, Daniel P.....	221 3d street, n. w.
Holden Raymond T.....	802 6th street, s. w.
Hooe, A. Barnes.....	1110 New York avenue, n. w.
Howard, Joseph T.....	1126 9th street, n. w.

Howland, George T.....	825 Vermont avenue, n. w.
Hughes, William D.....	651 H street, n. e.
Hull, Theodore Y.....	Brookland, D. C.
Hunt, Presley J.....	1815 M street, n. w.
Hurt, Harry.....	1510 H street, n. w.
Hyatt, Franck.....	1022 14th street, n. w.
Jackson, V. B.....	1305 H street, n. w.
Jenner, Norman R.....	1731 12th street, n. w.
Johnson, Albert E.....	117 B street, s. e.
Johnson, Henry L. E.....	1821 Jefferson Place, n. w.
Johnson, Joseph Taber.....	1728 K street, n. w.
Johnson, Louis A.....	709 C street, s. w.
Johnson, Wallace.....	1414 U street, n. w.
Jung, Franz A. R.....	825 Vermont avenue, n. w.
Jung, Sofie A. Nordhoff.....	825 Vermont avenue, n. w.
Junghans, John H.....	417 D street, n. e.
Keech, Thomas A. R.....	424 East Capitol street.
Kelley, John Thomas, Jr.....	1312 15th street, n. w.
Kelly, Daniel J.....	1635 19th street, n. w.
Kerr, James.....	1711 H street, n. w.
Keyes, Charles W.....	1108 8th street, n. w.
King, Albert F. A.....	1315 Massachusetts avenue, n. w.
King, Ernest F.....	Bond Building.
Kleinschmidt, Carl H. A.....	3048 N street, n. w.
Kober, George M.....	1600 T street, n. w.
Kolipinski, Louis.....	631 I street, n. w.
Koonen, Charles K.....	600 M street, n. w.
Kurtz, John.....	3142 P street, n. w.
Lamb, Daniel Smith.....	800 10th street, n. w.
Lamb, Isabel Haslup.....	800 10th street, n. w.
Lamb, Robert Scott.....	2900 Q street, n. w.
Lee, Thomas S.....	1714 I street, n. w.
Leech, Daniel Olin.....	631 Maryland avenue, n. e.
Leech, Frank.....	1715 14th street, n. w.
LeMerle, Eugene L.....	2011 Q street, n. w.
Lemon, H. T. A.....	629 G street, s. w.
Lewis, Duff G.....	1311 14th street, n. w.
Lewis, Samuel E.....	1418 14th street, n. w.
Lochboehler, George J.....	55 K street, n. w.
Lorigan, Kathryn.....	208 Indiana avenue, n. w.
Loring, Frank B.....	1420 K street, n. w.
Luce, Charles R.....	215 2d street s. e.
McArdle, Thomas E.....	1120 16th street, n. w.
McCormick, John H.....	128 C street, s. e.
McGee, Anita N.....	1901 Baltimore street, n. w.
McGuire, James C.....	818 17th street, n. w.
McKimmie, Oscar A. M.....	1333 N street, n. w.
McLain, John S.....	1320 19th street, n. w.
McLaughlin, Thomas N.....	1226 N street, n. w.
McNally, Valentine.....	Hamilton House.
Macatee, Henry C.....	3 Thomas Circle.
Mackall, Louis.....	3040 Dumbarton avenue, n. w.
Mackall, Louis, Jr.....	1409 30th street, n. w.
Maddox, Albert S.....	816 15th street, n. w.
Magee, M. D'Arcy.....	1355 Corcoran street, n. w.
Magruder, George L.....	The Farragut.
Mallan, Thomas F.....	27 B street, s. e.
Malone, W. P.....	1510 H street, n. w.
Marbury, Charles C.....	1121 14th street, n. w.
Marshall, Collins.....	2507 Pennsylvania avenue, n. w.

Mason, Robert F.	1605 Connecticut avenue, n. w.
Masterson, William L.	2 I street, n. e.
Maxcy, Frederick E.	1118 Rhode Island avenue, n. w.
Mayfield, Clifton.	1335 30th street, n. w.
Mazzei, F. A.	301 2d street, n. w.
Medford, H. S.	138 C street, n. w.
Merriam, Arthur C.	1201 New Jersey avenue, n. w.
Metzerott, John H.	1110 F street, n. w.
Miller J. Preston.	2621 14th street, n. w.
Miller, Maurice E.	1618 H street, n. w.
Miller, Thomas.	1616 7th street, n. w.
Miller, William L.	410 K street, n. w.
Moran, John F.	2426 Pennsylvania avenue, n. w.
Morgan, Edwin L.	2315 Pennsylvania avenue, n. w.
Morgan, Francis P.	1739 P street, n. w.
Morgan, James D.	919 15th street, n. w.
Morgan, W. Gerry.	1417 Rhode Island avenue, n. w.
Morris, George G.	815 14th street, n. w.
Morse, Edward E.	1525 I street, n. w.
Moulden, Wm. R.	1305 Rhode Island avenue, n. w.
Mullins, J. B.	1516 H street, n. w.
Muncaster, Otho M.	802 19th street, n. w.
Muncaster, Stewart B.	907 16th street, n. w.
Muncey, Elizabeth B.	2000 14th street, n. w.
Murray, Thomas Morris.	730 17th street, n. w.
Nash, Francis S.	1723 Q street, n. w.
Neff, Wallace.	1337 K street, n. w.
Nevitt, James R.	618 3d street, n. w.
Newman, Henry M.	2403 Pennsylvania avenue, n. w.
Nichols, J. B.	1331 N street, n. w.
Norris, Phebe R.	1109 14th street, n. w.
Ober, George Clark.	210 B street, s. e.
Parsons, Mary A.	1216 H street, n. w.
Perry George N.	1316 Q street, n. w.
Pickford, Edward F.	422 8th street, s. e.
Pile, Mayne M.	1332 R street, n. w.
Polkinhorn, Henry A.	816 15th street, n. w.
Pool, Benjamin G.	945 Rhode Island avenue, n. w.
Portman, Adeline E.	Chevy Chase, Md.
Prentiss, Daniel Webster.	1101 14th street, n. w.
Prentiss, Elliott C.	1101 14th street, n. w.
Price, John F.	607 6th street, s. w.
Radcliffe, Samuel J.	2733 P street, n. w.
Ramsburgh, Jesse.	1021 Vermont avenue, n. w.
Rand, Charles F.	1228 15th street, n. w.
Reeve, Jesse N.	1606 19th street, n. w.
Reisinger, Emory W.	1209 13th street, n. w.
Reyburn, Robert.	714 13th street, n. w.
Rhett, Henry J.	1309 Connecticut avenue, n. w.
Richardson, Charles W.	1102 L street, n. w.
Richey, Stephen Olin.	732 17th street, n. w.
Robbins, Henry A.	1750 M street, n. w.
Robins, William L.	1700 13th street, n. w.
Roman, Frederick O.	1501 8th street, n. w.
Roy, Philip S.	1 L street, n. w.
Ruffin, Sterling.	1023 Vermont avenue, n. w.
Savage, L. S.	Bennings, D. C.
Scholl, Joseph.	615 D street, n. w.
Scott, James Foster.	The Albany.
Sellhausen, E. A.	640 G street, n. w.

Shands, A. R.....	1319 New York avenue, n. w.
Shute, Daniel K.....	1101 13th street, n. w.
Simpson, John C.....	St. Elizabeth Hospital.
Smith, Thomas C.....	1133 12th street, n. w.
Snyder, Arthur A.....	3051 N street, n. w.
Sohon, Frederick.....	512 I street, n. w.
Sothoron, Elmer H.....	1921 I street, n. w.
Sowers, Zachariah T.....	1707 Massachusetts avenue, n. w.
Sprigg, William M.....	1015 16th street, n. w.
Squire, Susanna J.....	122 E street, s. e.
Stavely, Albert L.....	1234 14th street, n. w.
St. Clair, Francis A.....	1319 T street, n. w.
Stone, Charles G.....	Brightwood, D. C.
Stone, Isaac S.....	1449 Rhode Island avenue, n. w.
Storch, A. B.....	142 E street, n. e.
Stoutenburg, John A.....	116 2d street, s. e.
Street, Daniel B.....	1102 9th street, n. w.
Street, D. Baen.....	1102 9th street, n. w.
Strobel, M. Louise.....	16 R street, n. w.
Stuart, A. Rhett.....	7 Dupont Circle
Stuart, James.....	937 R street, n. w.
Suddarth, James L.....	817 North Capitol street.
Suter, Henderson, Jr.....	3050 N street, n. w.
Suter, Norwood.....	911 16th street, n. w.
Taylor, Thomas.....	238 Massachusetts avenue, n. e.
Thomas, Ada R.....	The Thomas.
Thomas, John D.....	1603 19th street, n. w.
Thompson, Harold P. P.....	1218 New Hampshire avenue, n. w.
Thompson, Joseph Ford.....	804 17th street, n. w.
Thompson, Millard F.....	484 Maryland avenue, s. w.
Thönssen, Wm. J. R.....	457 M street, n. w.
Tompkins, Edmund L.....	1512 Q street, n. w.
Toner, John E.....	Government Hospital for the Insane.
Tubman, James R.....	1222 11th street, n. w.
Tucker, Wm. Peyton.....	2905 14th street, n. w.
Tyler, Abbie C.....	1126 12th street, n. w.
Vale, Frank P.....	1327 L street, n. w.
Van Rensselaer, John.....	2 Thomas Circle.
Vincent, Thomas N.....	1221 N street, n. w.
Walsh, F. C.....	1504 H street, n. w.
Walsh, John Edgar.....	200 East Capitol street.
Walsh, Ralph.....	1504 H street, n. w.
Walter, John.....	1010 F street, n. w.
Walter, William F.....	713 4½ street, s. w.
Ward, William.....	1919 H street, n. w.
Ward, William H.....	1756 Pennsylvania avenue, n. w.
Watkins, Samuel E.....	1246 10th street, n. w.
Weaver, Clarence A.....	1614 Q street, n. w.
Wellington, John R.....	1335 N street, n. w.
Wells, Walter A.....	1133 14th street, n. w.
Whitson, W. E.....	418 6th street, n. w.
Wilmer, William H.....	1610 I street, n. w.
Wilson, Anne A.....	1814 Jefferson Place, n. w.
Winter, Eugene C. C.....	815 4½ street, n. w.
Winter, John T.....	719 Mount Vernon Square.
Wood, George W.....	2904 P street, n. w.
Woodward, William C.....	508 I street, n. w.
Yarnall, J. H.....	3120 N street, n. w.
Yarrow, Henry C.....	814 17th street, n. w.
Young, Parke G.....	1103 O street, n. w.

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WALLACE NEFF.

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WASHINGTON MEDICAL ANNALS

INTESTINAL OBSTRUCTION.*

By EDWARD A. BALLOCH, A. M., M. D.,

Washington, D. C.

This paper is not intended as an exhaustive discussion of the subject which gives it its title, but is prompted by a recent experience with three cases of this nature, occurring within the space of one week, and with a different causation in each case. From these cases I myself learned several valuable lessons, and it is hoped that their brief consideration may not be without profit to others. A short summary of the cases may serve as a text from which to draw several more or less pertinent conclusions.

Case I.—On January 24, 1902, I received a message by telephone asking if I could operate at once upon a case of obstruction of the bowel. On my arrival at the Sibley Hospital I found the patient to be C. F., white, age 61, a well-nourished man of good physique and exemplary habits. From his attending physicians the following history was obtained: He was taken on the evening of January 20 with severe pain in right iliac region, and vomiting. After suffering all night, a physician was called, on the morning of the 21st, who found pain and tenderness at McBurney's point, vomiting and general abdominal distress. He made a diagnosis of appendicitis; gave calomel in broken doses and advised the application of hot stupes. On the morning of the 22d, the calomel having had no effect, and the patient having had pain and vomiting all the time, castor oil was tried, which was vomited after a few hours. Hiccough was now noted. Another physician was now called, and more cathartics tried, as well as high enemata, the patient continuing to have pain, vomiting and hiccough. On the next day a third physician was added to the other two, and, by his advice, high enemas of Epsom salt, glycerin and castor oil were used, without relief to the symptoms above noted, which continued in full vigor. On the morning of the 24th it was decided that obstruction was present, and that operative intervention

* Read before the Medical Society of the District of Columbia, April 16, 1902.

offered the only hope of relief. He was accordingly removed to Sibley Hospital, and I was sent for.

I found the patient with an anxious expression of countenance and with pain and tenderness, on pressure or percussion, over the entire abdomen, the bowels being enormously distended and tympanitic. He was vomiting at frequent intervals. Pulse 90, compressible; temperature 98; respiration 34, and shallow. As obstruction of some kind was clearly present, he was immediately prepared for operation and the abdomen opened by a median incision 6 inches long. As soon as the peritoneum was opened the tense and distended bowels rolled out. The patient was practically eviscerated, the intestines protected by hot towels, and a rapid search made for the seat of the obstruction. It was found at the caecum, and consisted of a band running from the caecum across the ascending colon and constricting the bowel at that point. The band was composed of the obliterated appendix, reduced to the diameter of a darning needle and embedded in a narrow band of fibrous tissue three-eighths of an inch in width. This band was tied in two places and cut away, freeing the constricted colon. Considerable time was lost in checking the hemorrhage from numerous vascular adhesions around the caput coli, which were accidentally torn. Some difficulty was experienced in getting the distended intestines back into the abdominal cavity, but they were finally replaced and the abdomen rapidly closed by through and through sutures, after being filled with hot salt solution.

The main feature of the after history of this case was the incessant vomiting, which persisted in spite of every remedy and device that could be thought of and tried. The bowels moved twice on the day after the operation in response to enemas, and gas was passed freely per rectum. There was also one action on the 26th and two on the 27th, showing that the constriction had been fully relieved. A fact of some interest was noted in connection with the bowel movements. The first stool after the operation consisted of ordinary yellow fecal matter, while those which followed were black and foul-smelling, similar in all respects to the matter vomited. This was interpreted as showing that at the time of operation the decomposition of the intestinal contents had not reached the ileum. With these favorable signs, however, the incessant stercoraceous vomiting continued. All thought of stomach feeding was out of the question, as that viscus would not tolerate even the smallest quantity of the blandest liquids. Nutrient and stimulating enemas were freely used, but toward the last the rectum became intolerant of everything, and he died at 8 o'clock on

the evening of the 27th, three days after the operation, worn out by the constant vomiting and poisoned by absorption of the decomposed intestinal contents.

From the family it was afterwards learned that he had suffered from a very severe attack of "inflammation of the bowels" in 1861 and a less severe one in 1880. It was also stated that he had had more or less trouble of a dyspeptic nature for several years past, with frequent attacks of vomiting. From the condition of the appendix at the time of operation it seems reasonable to attribute all these troubles to an old attack of inflammation of that organ, of the obliterative type, which ultimately resulted in the formation of the band which caused the fatal constriction. This case is offered without comment for the consideration of those who believe that the medical treatment of appendicitis secures as perfect an immunity from after troubles as the operative.

Case II. Wm. J., colored, age 25, was admitted to Freedmen's Hospital January 23, 1902, with the following history: Always healthy until August, 1901, when he had severe pain in the right iliac region, with vomiting, which his attending physician called appendicitis. After an illness of three weeks a swelling appeared in right loin. This was opened, giving exit to a large amount of pus. A sinus resulted which remained open for two months, but finally closed. In the latter part of December he was again attacked with violent pains in the abdomen, which have persisted intermittently ever since. For the last three weeks he has vomited nearly every day and has had more or less constipation. Says that since January 17th the constipation has been absolute, in spite of the administration of various purgatives, and that vomiting has been almost constant.

Patient seems to be emaciated and is much prostrated. Expression anxious; face pinched; pulse weak and rapid; temperature subnormal; abdomen enormously distended and very tympanitic; peristaltic movement of small intestine plainly visible through thin abdominal walls. A hard mass can be felt in the right iliac region, from the iliac crest upward. In the right loin is a puckered scar where the former abscess was opened.

The history seemed a pretty clear one of acute suppurative appendicitis, followed by adhesions, and the abdomen was opened January 25th by an incision at the outer border of the right rectus muscle with the full expectation of finding some such state of things present. Within a few minutes after the abdomen was opened the appendix was brought to view, and, to my surprise, was absolutely normal in every way. Surrounding the ascending

colon was a hard mass which extended upward to the liver. The mass was firmly adherent to the posterior wall of the abdomen, and in it the involved bowel was buried and twisted in such a confused tangle as to make its dissection impossible without the expenditure of more time than the patient's weak condition would justify. The same objection applied to anastomosis or resection, so the peritoneum was united to the abdominal wall in the lower portion of the wound, a coil of intestines stitched to the peritoneum and the rest of the wound closed. The pulse during the operation ranged between 120 and 144, precluding the possibility of elaborate measures because of its weakness, the use of strychnia being frequently necessary. Six hours later the bowel was opened and exit given to a large amount of liquid feces. The patient began to improve immediately and made a rapid convalescence. He sat up on the tenth day, and February 6th, twelve days after operation, he had a large semi-solid stool per rectum. Examination at this time showed the mass in the right iliac region much softer than at the first examination. After the middle of February the mass could scarcely be felt at all. As soon as the bowels began to move naturally the fecal fistula was compressed by a pad and truss. This acted very efficiently, and there was practically no leakage of intestinal contents, all the stools passing per anum. He was up and about the ward, but the emaciation did not improve, and he did not gain strength in spite of generous feeding and abundant stimulation. His physical condition was never such as to justify an operation for the closure of the fecal fistula, and he suddenly died February 19th, twenty-five days after operation, having been up the day before. Autopsy February 20th by Dr. D. S. Lamb showed that the opening had been made in the jejunum, 30 inches beyond the duodenum, and that it was securely adherent to the wall of the abdomen, no leakage having taken place. Stomach and duodenum empty. The bowel below the artificial opening contained gas and feces. Mesenteric glands enlarged. A thick, malignant tumor involved all the coats of the ascending colon, narrowing the lumen, and extending to the 12th rib and kidney, which, however, were not involved. The remaining organs of the chest and abdomen were normal.

This case is a good type of slow occlusion of the bowel from pressure and illustrates in a typical manner how, at any time, such a chronic obstruction may become acute without special warning. Another very interesting feature of abdominal growths is also very well illustrated by this case. I mean the spontaneous disappearance of apparently malignant, inoperable growths within the abdomen after a mere exploratory operation. In this case the mass was palpated many times before operation and was very

carefully explored at the time the abdomen was opened. Its extent, as shown at the autopsy, was decidedly smaller than at the operation, and I see no reason to doubt that it was undergoing this form of involution. Surgical literature contains many instances of the occurrence of this interesting phenomenon, and it may now be regarded as established that masses, apparently malignant, do disappear in this manner. At a meeting of the Royal Medical and Surgical Society of England, held in January, 1894, Mr. Greig Smith reported three cases, the leading features of which were "The presence of a solid tumor in the abdomen, absence of pyrexia, clinical evidences of malignancy on abdominal section, and ultimate disappearance of the tumor with complete restoration to health." (*Annals of Surgery*, Vol. XXIV, p. 759.) Bland Sutton (*ibid.*) reports four similar cases, and a recent observer, Mr. D'Arcy Power (*Lancet*, March 4, 1899), records no less than seven instances of this nature. No satisfactory explanation of this phenomenon has yet been offered. Greig Smith is of the opinion that these masses represent accumulations of cells of a phagocytic nature, which are thrown out around a minute opening in the bowel for the purpose of protecting the peritoneum. This theory of a leaking fistula will not, however, explain all cases, and it is probable that another suggestion, offered by Bell, is nearer the truth. Bell (*Annals of Surgery*, Vol. XXV, p. 524), ascribes the disappearance of these tumors to a certain digestive action on the part of the peritoneum, which action is stimulated by the operation. Whatever the explanation, the fact cannot be disputed.

Case III.—Susan H., colored, was brought by the ambulance to Freedmen's Hospital January 29, 1902. She was unable to give her exact age, but was apparently about sixty. She was very much collapsed and in great pain. Owing to her confused mental state, she was not able to give a clear history. According to her statement, she was taken ill on the 27th with pain in the abdomen and vomiting. A physician was called, who administered various cathartics, in the endeavor to move her bowels, all of which were promptly vomited. The pain and vomiting growing worse, he advised her removal to hospital.

On admission her pulse was 138 and very weak; respiration, 40. The nurse's notes state that the thermometer failed to register, so that presumably the temperature was subnormal. Shortly after her admission she vomited a quantity of greenish fluid, and this vomiting continued at frequent intervals until her death. A high

enema was given, which was shortly expelled, followed by a little mucus and blood. I saw her soon after her admission, and found her almost moribund. No radial pulse could be felt, and the extremities were cold. It was felt that the case was practically hopeless, but it was thought that if a coil of intestine could be opened she might rally. As a general anesthetic was out of the question, the operation was done under cocain. An incision $2\frac{1}{2}$ inches long was made in right iliac region, at outer border of rectus muscle. When the peritoneum was opened there was a free flow of bloody serum with a very foul odor. Two fingers were inserted into the peritoneal cavity, but nothing abnormal could be felt. The problem was whether to drain off the fluid from the peritoneal cavity or to disregard it and at once establish a fecal fistula. I compromised by stitching the peritoneum to the abdominal wall all around and sewing the bowel to the peritoneum, except at the lower part, where a small drain was inserted. The hope was that in a few hours the fluid might drain off and sufficient adhesions form to render less likely the contamination of the peritoneum when the bowel was opened. The operation took forty minutes, and during its performance the pulse appeared at the wrist, and was found to be 120. This was probably due to the cocain. She was actively stimulated, but failed to rally, and died in collapse an hour and a half after the completion of the operation.

Autopsy the next day by Dr. D. S. Lamb showed the greater omentum contracted and the intestines in the lower abdomen distended and greenish-black in color. Some bloody fluid in abdomen. Nine and a half feet of intestine, from the colic valve upward, had passed through a congenital opening about one inch in diameter in the mesentery, and had become strangulated and more or less gangrenous.

Examining these cases together, we find certain signs and symptoms common to all. In the first place, I may mention the occurrence of vomiting in connection with absolute constipation. I regard this as almost pathognomonic of obstruction, and I do not think I go too far when I say that it should be considered as an absolute indication for surgical intervention. It is of the utmost importance that this fact should be realized early in every case. The vomit is at first the contents of the stomach, with perhaps some bile, but as the fluid becomes dammed up by the obstruction a reversed peristalsis occurs, and the decomposed products of digestion are ejected without any effort. I am quite sure that the picture presented by one of these cases, where the black, foul-smelling liquid mass rolls out of the patient's mouth without effort and almost without his knowledge, is one which will never

be forgotten by any one who has seen it. The decomposition of the intestinal contents is accompanied by the free generation of gas, so that tympanites is soon added to the clinical picture, and may reach an extreme degree.

In this connection may be mentioned a fact of some diagnostic importance. When, with the other signs of obstruction present, the tympany is slight, the obstruction is probably high up in the small intestine. Conversely, excessive tympany indicates an obstruction in the large bowel or low down in the small one.

Another symptom is the well-known peritoneal facies, with anxious expression, sunken eyes, pinched nose and cold extremities. Associated with this is usually a subnormal temperature. The pulse shows a constantly increasing tendency to weakness and rapidity.

While we may not see in any one case all the cardinal symptoms of obstruction, viz : pain, constipation, vomiting, tympanites and tumor, we should, it seems to me, be able to make the diagnosis without particular difficulty. In my opinion, the occurrence of vomiting, in connection with absolute constipation, renders the diagnosis practically certain, while if to these is added distention and a rapidly weakening pulse obstruction is present beyond doubt.

The allusion to constipation as a prominent symptom in these cases leads naturally to the mention of the abuse of cathartics where obstruction may exist. In the three cases presented for your consideration there is a striking similarity in the histories. The medical treatment in each was largely the administration of one cathartic after another in the vain hope of moving the bowels. If cathartics are pushed in these cases the irritability of the stomach and bowels is increased, the reversed peristalsis is stimulated, the intestinal products are decomposed, and consequently the vomiting comes on earlier and is more persistent and intractable. The stomach is soon reduced to a condition where not even the blandest fluids will be tolerated.

What has been said of cathartics does not apply to the use of high rectal injections. These serve a twofold purpose, as they conduce to the comfort of the patient by clearing out the lower bowel and are also of value in the matter of diagnosis. If the administration of an enema of this description is followed by the expulsion of a little mucus and blood, the probability of obstruc-

tion is very strong. This sign was noted in the third of the cases above narrated.

In the third place the utter uselessness of a purely medical plan of treatment in these cases must be apparent. It is true that there has recently been put on record a respectable number of cases where an apparent obstruction of the bowel was relieved by heroic, in fact, poisonous doses of atropia. It is probable that these were cases of ileus or volvulus, as I do not believe that any true case of obstruction can be relieved by the administration of drugs. Again, the cases where this plan has been tried and has failed are not recorded. If, then, medical treatment is of no avail, the necessity for early surgical intervention logically follows. But let it be early. It is neither just to the sufferer nor fair to the surgeon to wait until the patient is moribund and then expect a miracle to be worked by an operation. The human economy will at times tolerate a surprising amount of medical maltreatment, but there is a limit beyond which we may not safely go. In these cases I feel that this limit is reached when the vomit becomes of the so-called stercoraceous variety. This shows that the bowel is irritable and that, as it cannot get rid of its contents in a downward direction, it is endeavoring to force them upward. Operation may succeed, it is true, after this type of vomiting sets in, but its occurrence increases the chances of failure in a marked degree.

While the curative treatment of acute obstruction must of necessity be surgical, there is much that may be done before operation to render the patient more comfortable and enhance the chances of success after operation. Chief among medical measures is lavage, both of the stomach and the colon. Lavage of the stomach lessens vomiting, and keeps that organ free from the decomposed albuminoid matter which would otherwise accumulate there. Free washing out of the lower bowel demonstrates the permeability of the colon; occasionally, as has been said, aids in diagnosis, and renders the bowel tolerant of nutrient enemata, upon which we must rely for nourishing the patient. Attempts at stomach feeding are not only useless, but positively detrimental, as they tend to increase vomiting, which we want to avoid.

In the presence of acute pain, I do not regard the use of opiates as harmful, provided always that they are not given to such an

extent as to mask the real condition and lull the physician and patient into a false sense of security, and thus postpone the use of adequate means of relief.

Surgical advice should be sought early. Like appendicitis, this is a case where medicine and surgery should go hand in hand. They are not antagonistic, but complementary to each other. The calling in of a second physician is likely to mean delay until he has had a chance to try his favorite cathartic. This may be satisfying to the consultant, but is very liable to be disastrous to the patient.

Of the operation itself it may be said that its chief aim should be to remove the cause of the obstruction, or, if this be not possible, to make a new way around it or to provide a new exit.

The first indication is fulfilled when we remove constricting bands, remedy an intussusception, take away growths which are pressing on the bowel, or release intestine which is caught in abnormal openings in the mesentery or elsewhere. This course of procedure is preëminently successful in the early cases, before the patient is exhausted by pain and vomiting or poisoned by the absorption of ptomaines. There is time for thorough work, and we do not feel that necessity for hurry on account of the condition of the patient which we feel in the cases operated on in the later stages of the affection. If the site of the obstruction can be definitely located, the incision may be made directly over it; otherwise a median incision should be made, to be extended as occasion may demand. Early operation, then, is beneficial to the patient, and decidedly more satisfactory to the operator.

In some instances we find it impossible to remove the obstruction, or the condition of the patient will not allow the expenditure of the necessary time. In such cases we can do one of two things. We can unite the bowel above the obstruction to the bowel below it, and thus cut out of circuit the obstructed portion, or we can content ourselves with making an artificial anus. It all depends on the patient's condition. If he is strong enough to withstand a somewhat prolonged operation, we may adopt the first course. If, as is usually the case, he does not come under the surgeon's care until all medical means have been exhausted, it is a question whether his safety is not better secured by simply opening the abdomen and stitching into the wound the first coil of intestine which presents. My own judgment is in favor of the latter course,

unless we are reasonably certain of the patient's ability to endure the double shock of the operation and the anesthetic.

I speak advisedly when I class the anesthetic as one of the dangers which the patient has to encounter in these cases. A complete operation for intestinal obstruction means the expenditure of nearer two hours than one of valuable time, and two hours under either chloroform or ether is an ordeal to which any careful surgeon must hesitate to subject a patient already in a critical condition. Where the vomiting has been prolonged before operation, ether certainly does not tend to check it afterward, and I cannot help feeling that many other-wise fatal cases might get well if we could have some anesthetic free from this objectionable quality.

The making of a fecal fistula has much to commend it. The mere opening of a coil of intestine may be done with perfect ease under local anesthesia by cocain and this element of danger eliminated. It relieves the urgent symptoms, checks vomiting, gives exit to the intestinal contents, and gives the patient a chance to rally and gain strength enough to withstand an operation which shall permanently remedy the trouble. Taking all these facts into consideration, I believe that the patient's interests will be best served, in most cases, by what may be called this temporary method of relief. A makeshift like this, which saves the patient, is preferable to a more skillful radical operation with fatal result.

It seems hardly necessary to take up time with a discussion of obstruction from intussusception and other causes, as the symptomatology and diagnosis are not radically different from the types already considered and their treatment practically the same. I will, therefore, bring this paper to a close by a few conclusions, which may be legitimately drawn from the cases presented.

1. Early diagnosis is the main factor in the saving of life in cases of bowel obstruction.

2. Acute intestinal obstruction is characterized by symptoms which should be easily recognized.

3. If the probability of obstruction exists, cathartics should be withheld.

4. Chronic, slowly increasing obstruction may, at any time, become acute.

5. Surgical advice should be sought early.

6. In true obstruction the only remedy is surgical intervention.

7. The choice of operation depends upon the condition of the patient, and should, if possible, be radical.

8. Beyond question, in the cases in the last stages and probably in doubtful cases the proper plan is to establish a fecal fistula and thus gain time to get the patient in condition for a more radical operation later.

9. General anesthesia is a distinct element of danger in operated cases, and where a fecal fistula is to be established local anesthesia should be used by preference.

DISCUSSION.

Dr. Wood emphasized the necessity for early diagnosis and operation. In his first case the family put off operation from day to day, and as a result the patient died. In his second case, intussusception in an infant 8 months old, death resulted from pneumonia on the fourth day after operation. In a third case of intussusception, the child passed about 6 inches of intestine and recovered. The family had refused to consent to an operation.

Dr. Reyburn spoke of the danger which accompanied the prolonged administration of anesthetics, especially chloroform; it was frequently the cause of death, although the fact was not recognized and other causes were assigned. An operation was not necessary in every case of intestinal obstruction. He recalled a case seen with Dr. Balloch in which the patient recovered without surgical intervention by the use of high enemata. He deprecated the use of opiates. He related an interesting case in which the obstruction had existed for 18 hours, and it was thought that the child would die. The obstruction was relieved by passing soda water from an ordinary siphon high up into the bowel by means of a tube. The child died 6 months afterward of another attack, for which it was treated by another physician. The siphon method deserved further trial.

Dr. I. S. Stone endorsed Dr. Balloch's conclusions *in toto*. Intestinal obstruction was the *bête noir* of abdominal surgery; it was not too much to say that its mortality was greater than that of any other operation. As to the apparent disappearance of cancer, referred to by Dr. Balloch, while this sometimes happened, the growth was very liable to reappear later; in one of his cases the patient enjoyed perfectly good health for 4 years after the removal of a cancerous ovary, but at the end of that time the growth reappeared. Hence one should not be too positive that the disease has been entirely eradicated. In intestinal obstruction, when peristalsis can be seen through the abdominal wall, it was manifestly useless to give cathartics. As to Dr. Balloch's allowing four to six hours to elapse for the formation of adhesions,

he preferred to open the bowel at once, as time was a consideration, especially if the patient's condition was unfavorable.

Dr. Behrend said that the object of treatment was to get normal peristalsis. This should be done by injections per rectum, and not by the administration of active cathartics by the mouth. He had successfully used injections of senna and asafoetida, even when the peristaltic movements of the intestine were visible through the abdominal wall.

Dr. C. G. Stone congratulated Dr. Balloch upon his paper, and the results which he had reported.

Dr. Jung agreed with the essayist as to the necessity for early operation, always within 8 days. One author says that the disease is nearly always fatal after the seventh day. Why do physicians delay calling in a surgeon? Principally because of the great difficulty which is encountered in some cases in making the diagnosis in the early stages; meanwhile, they very properly give medicines. He commended the use of the galvanic current in selected cases; twenty to thirty cures by this means were on record. Cures by laxatives had also been recorded; the particular one was immaterial; every physician had his favorite cathartic. He related a case in which a cure had been produced by this means after operation had been decided upon but postponed. The patient was given senna and oil. Such results often give rise to delusive hopes, but sometimes they succeed.

Dr. S. S. Adams said that Dr. Jung had struck the keynote in his reference to diagnosis; it could not always be made at once with certainty; the surgeon experienced as much difficulty in this regard as the average practitioner of medicine. Hence operation was often unavoidably delayed. As soon as the diagnosis was made, however, operation should be performed. The differential diagnosis between intestinal obstruction and tuberculosis, appendicitis and some cases of cancer, particularly in the young, was often difficult and sometimes impossible. He had seen 15 to 20 cases in which the obstruction was relieved by medicinal treatment while the diagnosis was in doubt. Another cause of delay lay in the fact that the relatives often obliged the physician to put off calling in a surgeon after he had advised them that this was the proper course to pursue. In such cases the physician was not to blame. He believed that no practitioner of even average ability would neglect to advise operation after diagnosis had been made, and persist in the administration of drugs. The surgeon himself often hesitated to operate after he had been called in consultation.

Dr. Balloch, in closing, said that the crux of the whole matter was early diagnosis; after the nature of the trouble had been made out, there was rarely a question as to early operation. When in doubt, however, medicines should be given per rectum, and not by mouth.

CASES OF OBSTRUCTION OF BOWEL: 1, FROM HERNIA; 2, FROM VOLVULUS; 3, FROM TUMOR.*

BY GEO. T. VAUGHAN, M. D., SURGEON U. S. M. H. S.

1. W. G., age 60, colored, had suffered many years with a right inguinal hernia; was operated on over ten years ago, but the hernia returned. July 8, 1900, it suddenly came down about 11.30 A. M., while he was lifting a cake of ice. Had severe pain and vomiting. He was wearing a truss, and attempted to reduce the hernia, but failed. Admitted to Emergency Hospital, Washington, and operated on at 3 P. M., about four and a half hours after the hernia came down. The scrotal tumor was about as large as an adult head, very tense and dull on percussion at lower part. On opening the sac, it was found of the congenital variety, and contained a large mass of intestine and omentum—including the caecum and ileum. The small intestine was greatly congested, but not gangrenous; it was returned, but immediately a coil of black, gangrenous, small intestine came into view; the mesentery was very thick and congested. Twenty-eight inches of intestine were resected, and the ends united with a Murphy button, reinforced by a row of Lembert sutures. Bassini's operation for radical cure was then performed. Patient had an undisturbed convalescence; the button came away without trouble on the fourteenth day, and he insisted on going home July 26—eighteen days after operation.

This was regarded as a case of volvulus, associated with a strangulated hernia, and is perhaps explained by the conditions found in the next case.

2. H. W., colored, age 35, laborer, was taken sick at night, January 21, 1902, with cramps and pains in the bowels, and persistent vomiting. A right inguinal hernia, from which he had suffered many years, had come down, and he was unable to reduce it. Next morning, January 22, he returned to work, shoveling coal, but had to stop because the pain and vomiting came on again, and he was admitted to the Emergency Hospital at 12 o'clock—about 18 hours after the attack began. Here the hernia was reduced without difficulty, but his condition did not improve; the vomiting continued, the pulse was 100, but weak and thready, and the temperature subnormal—97.4 in the mouth. He failed

* Reported with specimens to the Medical Society of the District of Columbia, April 2, 1902.

to rally sufficiently to justify an operation, and died about 4 P. M.—about twenty or twenty-two hours after being taken ill.

Necropsy.—At least 1,000 cc (1 quart) of dark, bloody, offensive liquid was found in the peritoneal cavity. The small intestine was black, leathery, offensive in odor, and contained a similar dark, bloody fluid. The bulk of the gangrenous intestine lay on the left side of the median line, and examination showed a twist of the mesentery from right to left, and from below upward through an arc of 180 degrees, the upper edge of the twisted mesentery compressing the intestine at a point 8 feet from the pylorus, enough to leave a marked indentation. The superior mesenteric artery and vein were included in the twisted mesentery, and the vein was filled with a large thrombus; hence the enormous amount of gangrenous intestine, measuring 12 feet 8½ inches of small intestine, and including the coecum, which was also gangrenous, a little over 13 feet (390 cm.). The remaining intestine was collapsed and congested.

A comparison of these two cases is an eloquent argument for early operation. They also show the necessity of examining every case of strangulated hernia with special care, in order to make sure that no other obstruction exists. When the intestine has been exposed by operation it should be pulled down freely and examined for this purpose before closing the wound.

3. J. M., white, age 42. Family history: Father died of consumption, mother of dysentery; has five brothers and three sisters, living and in good health; had grippe 10 years ago and every year afterward for three years; had painter's colic seven years ago; denied all venereal disease. Present trouble began in October, 1901, with pain in the bowels and stomach, with heartburn and constipation. About Christmas he began to vomit about once a week, then daily, then irregularly. The vomiting seemed to have no relation to the taking of food, and was usually preceded by heartburn and violent peristalsis of the bowel; no blood vomited or passed by rectum. The constipation was marked; only one or two stools a week, and then the result of purgatives. He had lost greatly in flesh, probably 30 pounds. Gaseous tumors often formed, especially in the right iliac region. A diagnosis of chronic obstruction of bowel, probably at the iliacaecal valve, was made. Either tuberculous ulcer or cancer was suspected. Operation at Georgetown University Hospital March 17, 1902.

Under ether, the abdomen was opened through the right rectus muscle, opposite the navel, and a tumor of the hepatic flexure of the colon discovered. Six inches and a little over were resected and the ends united end to end by Connell's suture. The tumor was an adeno-carcinoma.

DISCUSSION.

Dr. Balloch said that the specimen of hernia was interesting on account of the rarity of the condition. The history illustrated the fact that it was well to examine carefully as much of the intestine as possible in operating for strangulated hernia. The specimen of volvulus was interesting as regards the etiology. What could have caused the twisting of the bowel? It was not the mere weight of the gut. Possibly, it might have been caused by the traction incident to the descent of the hernia.

Dr. Neff said that volvulus was the most rapidly fatal of all forms of intussusception unless promptly relieved, and also the variety which could most easily be relieved by the surgeon. The circumscribed area of tympanites over the site of the twist was a pathognomonic symptom.

CASE OF TRAUMATIC RUPTURE OF SPLEEN; SPLENECTOMY; DEATH ON SIXTH DAY.*

By EDWARD A. BALLOCH, A. M., M. D.,

Washington, D. C.

Mary W., colored, 17 years old, entered Freedmen's Hospital, Washington, January 24, 1902, with the following history: About midnight, January 18, she was knocked down and kicked in the left side by her drunken paramour; thinks she was unconscious about ten minutes. She was raised by her assailant and put to bed, she being unable to move. Had had severe pain all over abdomen, but worse in left side, ever since. Vomited twice on the 19th, and had had more or less nausea ever since. Was nursed by her lover until January 21, when he left her, saying that he was going for a doctor. He failed to return, and the case coming to the notice of the police, one of the physicians to the poor saw her. He promptly recognized the gravity of the case and directed her removal to hospital.

I saw her a short time after her admission, and found the fol-

* Reported with specimen to the Medical Society of the District of Columbia, April 2, 1902.

lowing conditions: A rather frail, delicate looking girl, lay quietly on her back, with knees drawn up. Expression anxious. Pulse 130, temperature 102, respiration 30. Brain and nervous system normal. Some bronchial rales over both lungs. Heart's action rapid and weak. No murmurs. Tongue coated. Abdomen excessively tender to touch; most marked over left upper quadrant, but was noted all over abdomen. Rigidity of upper half of left rectus muscle. In left upper quadrant was an area about four inches in diameter, perceptibly darker than the rest of the skin. The same appearance to a less degree, was noted in both iliac regions. Percussion dullness over region of spleen and stomach, tympanites elsewhere. She stated that her bowels had moved daily, without any evidence of blood. Urine, on several examinations, normal. Diagnosis: peritonitis with intra-abdominal hematoma, probably due to rupture of spleen. Circumstances beyond my control delayed operation until January 27, the treatment in the meanwhile being the cold coil to the abdomen, the free use of saline purgatives, and sufficient morphia to quiet pain and restlessness. Pulse and temperature continued about as on admission.

Operation January 27, assisted by Dr. Warfield. Incision at outer border of left rectus muscle from free border of ribs to level of umbilicus. When the peritoneum, which was thickened and injected, was opened, old, dark fluid blood freely flowed out. The lower end of spleen showed a distinct rupture. Another incision, joining the first at its upper end, was now made, extending four inches along the lower free border of ribs. The flap thus made being turned down, the hand was introduced and the spleen palpated. Another laceration was felt on its posterior surface. About twenty ounces in all of old blood escaped, and two double handfuls of clots were turned out. The clots and decomposed blood were mostly behind the stomach and extended as far as the diaphragm. There seemed to be no chance to save the spleen, and its removal was therefore decided on. A few light adhesions were tied off and the organ gently delivered through the wound. The pedicle was approached from behind, clamped near the spleen, tied off in two sections with silk, and the spleen cut away. The cavity was washed out with salt solution, a drain inserted at the lower angle of the horizontal incision and the rest of the wound closed. The abdominal cavity was not further explored, as her

condition did not warrant extensive or prolonged search, and there was nothing in the history of the case to indicate injury to the abdomen elsewhere. Time of operation 45 minutes. At its close the patient was given an enema of hot salt solution, black coffee and brandy, and put to bed with a pulse of 156.

The after treatment may be summed up by saying that it was actively stimulating. Strychnia, digitalis, salt solution and alcohol were freely used and iron given. I may say here that the blood examinations showed only anemia, the reds being 2,500,000. The temperature after operation was between 101 and 102, and the pulse between 120 and 140. The wound was examined on the second day and had drained freely. No infection. Drain removed. It was dressed again on the fifth day and found perfectly dry and free from infection. On the fourth day after operation she began to have cough and annoying accumulation of mucus in the throat. Signs of consolidation were now evident in the upper part of right lung. From this time there was a gradually increasing weakness, the pulse becoming very feeble in spite of energetic stimulation, and she died quietly at 3 A. M., February 2.

January 24, temp. 101-102, pulse 120-130, resp. 30-36; 25th, temp. 102.4-100.8, pulse 128-132, resp. 38-40; 26th, temp. 99.8-103.2, pulse 90-136, resp. 40-42; 27th, temp. 101.2-101.6, pulse 120-140, resp. 28-32; 28th, temp. 101.8-102, pulse 120-146, resp. 28; 29th, temp. 101.2-102.2, pulse 110-142, resp. 28-34; 30th, temp. 102-102.2, pulse 112-144, resp. 30-32; 31st, temp. 101.6-102, pulse 136-144, resp. 30-40. February 1, temp. 101.4-104, pulse 144-148, resp. 28-36.

The body was turned over to the coroner, and I am indebted to Dr. L. W. Glazebrook, Deputy Coroner, for the following notes of the autopsy:

The brain, with its vessels and membranes, was normal. Beginning hepatization in lower lobe of left lung. Right pleura slightly adherent. Red hepatization in upper lobe of right lung. Wound area in good condition. No blood in abdominal cavity. Gangrenous peritonitis, involving chiefly the colon and lower portion of ileum. Spleen absent. All other abdominal organs normal.

The gangrenous peritonitis was probably the result of injuries inflicted at the time of the assault and was in no way due to the operation.

DISCUSSION.

Dr. Neff said that the case was interesting and instructive. The termination was the usual one. Had laparotomy been performed immediately after the accident, the patient would have had some chance of recovery. The peritonitis was due to the trauma, not to the operation.

Dr. Bovée contrasted the results of splenectomy where the spleen was diseased and where it was normal. In the latter case, removal was usually followed by well-known characteristic symptoms—high fever, disturbance of functions of nervous system, etc. Such symptoms are less noticeable following the removal of a diseased spleen. The mortality, except in cases of leucocythemia (in which it was practically 100 per cent.), was about 13 per cent. This proportion was rapidly being cut down. If operation was performed for rupture of spleen within twenty-four hours of receipt of injury, the prognosis was favorable; later than this it was less favorable.

Dr. Vaughan agreed with Dr. Bovée as to the mortality from splenectomy, except that some leucocythemia cases did get well. Dr. Balloch had done the best that could be done for his patient. An earlier operation, however, might have saved her life. He related a case in which he had operated for internal hemorrhage within two hours after the accident, but the patient died. This was not strange, considering that he had removed not only the spleen, but also the left kidney, and had sewed up a rent in the liver. His colleague at Emergency Hospital had operated for rupture of the spleen a week after the injury, and the patient recovered.

NEURASTHENIA.*

By JOSEPH TABER JOHNSON, A. M., M. D., PH. D.,

Washington, D. C.

To those who have given the subject of this essay much attention, it will be manifestly impossible, in the brief time allowed for its reading, to give anything like a thorough consideration of the many phases of this protean modern disease. It is probable that a paper on some subject connected with gynecology, or abdominal surgery, might be expected from the essayist, but as he has in the last decade seen an increasing number of cases of neurasthenia, not only in his gynecological, but in quite an extensive general

*Read before the Medical Society of the District of Columbia, May 7, 1902.

practice, it occurred to him that a departure from the special subjects usually discussed might be that kind of a grateful rest, to both audience and writer, which is reputed to be found in change.

At all events, the importance of the subject proposed for discussion cannot be overestimated, as its victims are usually those members of society who can be least easily spared.

Neurasthenia, or nervous prostration, or nervous exhaustion, as this modern disease is frequently called, is not a disease of the poor day laborers, of the slums, of the uneducated; nor does it attack communities or carry off its victims by the spread of epidemics, as does cholera, yellow fever or the bubonic plague, but the havoc which it works is no less important to the business prosperity and social life of the State and the Nation. While in one sense the life of the gardener, the cook or the groom is just as important as that of his millionaire employer, yet, in another sense, the nervous breakdown and sudden withdrawal from a large business or the control of great enterprises so shocks the sensitive stock market and throws out of gear the harmony of current events as to make the wreck of one man of vastly greater importance to the business life and success of a thriving community than does the loss of another man who knows nothing and cares nothing for these exciting and thrilling events.

That neurasthenia is a disease of modern times no one familiar with its history, or with the onward march, at double-quick step, of the progress of our modern civilization, will deny. Attention is drawn to the difference which exists between the civilization of modern and ancient times. That the ancient Greeks and Romans enjoyed a high state of civilization we all know—higher than has been reached in some directions in recent generations—but we are informed by Beard that their languages contained no words, or their medical history any disease, which could be translated into neurasthenia, or even into nervousness.

Among the special elements in our modern civilization which may have given rise to neurasthenia may be mentioned the introduction into our modern strenuous life of such inventions and discoveries as steam, electricity, the daily newspapers, the development of the sciences, the higher education and mental activity of our women, and the immense and exciting rivalry and competition among business men, with all that this modern development and evolution implies.

The expression that the type of disease has greatly changed since the early settlement of this country is familiar to us all. While the plethoric habit and inflammatory type of disease was familiar to the medical men who practiced in Colonial times with the lancet and hydrargyri chloridum mite among hardy pioneers, the hewers of wood and the farmers, who carried a gun on one shoulder and hoe on the other, little mention is made of the occurrence, and less of the treatment of anemia, hysteria, neurasthenia or insanity. Of course, their occasional existence is not denied, but they did not prevail as they do now.

The literature of this subject scarcely dates back twenty years, and for several years was made up mostly by American authors. So much was this the case that when medical men over the sea began to devote some attention to it they referred to it as "that American disease."

Dr. George M. Beard, of New York, in 1880, wrote a small book on "Nervous Exhaustion," and followed it in 1884 with another on "American Nervousness." In the same year, Dr. J. Leonard Corning gathered together his writings in book form upon "Brain Exhaustion or Cerebrasthenia," while Dr. Weir Mitchell, of Philadelphia, about the same time, and a little later published his remarkable little books on "Wear and Tear of the Nervous System," and "Fat and Blood and How to Make Them," and worked out his plan of the *rest* cure for aggravated cases of hysteria and of nervous exhaustion, which is largely and most successfully practiced to-day, under the name of the Weir Mitchell Rest-Cure Treatment. Erb has a very good chapter on this subject in Ziemssen's Encyclopedia, and of late a great mass of literature has accumulated on neurasthenia and cerebrasthenia. Playfair, of London, wrote quite fully of Mitchell's successful treatment.

It is proposed to discuss this important modern disease very briefly, of necessity, under the following heads, without any pretence of exhausting any one of the topics referred to, but simply to take up some of the most important items under each division: 1, some of its causes; 2, some of its symptoms; 3, some of its results, and 4, some points in regard to the treatment.

The causes of this disease prevail chiefly among the best and most important part of our population, namely, among our brain workers in contradistinction to our muscle workers; and, as the

latter greatly outnumber the former, it will be seen that this disease will be met with in only a small fraction of what may be called American society. Thus Dr. Arthur Mitchell has shown that if a few thousands of the population of Scotland, among the educated and controlling or ruling classes, were destroyed and their places left unsupplied, the nation would fall downward into barbarism. Dr. Beard says the same is true of all lands, including our own, in a somewhat less degree. Of our seventy-five millions of population, but a very few millions have reached that degree of elevation where they are likely to be nervous. He says that in the lower orders—the classes which support our dispensaries and charity hospitals—in the tenements of our crowded cities, and even on the farms in the country, very few cases of this disease report for treatment.

One of the chief causes of our failure to sooner recognize the rapid growth and serious results of this increasingly frequent disease is the fact that the chief sources of the research of our best medical teachers and the clinical material for the instruction of our graduating classes has been in the public hospitals and dispensaries of the cities, where very few of these cases were to be found. Neurasthenia has been called by one writer a disease of the educated and the wealthy classes.

As it is the result of an overworked brain and of an overwrought and overstrained nervous system, it goes without saying, that this disease must be looked for in that class of our population who are brain workers and nerve exhausters, and these nervous wrecks would consequently not be found, except to a very limited degree, among the millions of our people in the agricultural districts, in the mines, factories and shops, or, in short, among those whose lives and occupations call only into use their muscles, instead of their brains and nervous systems.

We frequently hear the expression that in a large factory or mill, employing hundreds, and in some of the great railroads and steel plants of modern times, employing thousands of workmen and women, that Mr. So-and-so is the *brains* of the institution, or company, or syndicate, or, more recently, of the trust. These are the men who overwork their brains and become victims of cerebrasthenia. It is our bank presidents, our railroad controllers, our great lawyers, authors, scientists, preachers, editors, judges, doctors and men of large affairs and absorbing interests who break

down from overstrained nervous systems and form the modern army of neurasthenics.

One of the saddest features of this modern brain and nervous exhaustion army is that it is not altogether made up of overworked literary and educated men. A proportionately large army is rapidly developing among our ablest and best women. Neurasthenia is fast becoming one of the most frequent as well as one of the most troublesome and difficult diseases we have to treat among this most interesting and equally important part of our population. Its victims are not found among the queens of the kitchen, the laundry or the dairy, but among the queens of society, the school teachers, the writers, the daughters of the wealthy and the prize pupils in the increasingly numerous female seminaries and colleges of the country. Too much rivalry in the class room, too many examinations, too much education of the head and too little education of the heels, too much hot-house development and too little exercise in the open air, too many literary, linguistic and musical accomplishments and too few efforts to develop the physical departments of our future wives and mothers—all are fruitful and well-known causes of the development of anemia, hysteria and the most intractable forms of neurasthenia.

Too much work and too little play will make even young Jack a dull boy. Too much work and too little play will make old Jack a neurasthenic man, or Jennie a hysterical or cerebrastrhenic woman. Did time permit, all the causes merely hinted at above could be greatly elaborated and illustrated, but to a body of medical men this is hardly necessary. Chapters are devoted in some recent publication on this subject to such topics as the evils of specialization, to the necessity of punctuality, and the nervous strain necessary to catch the early morning train from suburban residence to the place of business in the great city, or to meet important appointments; the telegraph, the effects of noises on the nerves, railway travelling as a cause of nervousness, buying on a margin, stock gambling, etc., love disappointment, sorrow, jealousy, repression of emotion, domestic and financial trouble, politics and religion carried to the extent of fanaticism, and that Pandora's box of evil causes which leap out and crowd each other in their mad race for attention and treatment, known as sexual neurasthenia in both the male and female, but princi-

pally and most persistently found among that increasing class of social monstrosities described as sexual and moral perverts.

While the operation of most of the causes of neurasthenia above referred to might be classified with those causes of what are now described as "the preventable diseases," their limitation, control and final abolition, it is feared, may be more difficult in the former than in the latter cases. The restriction or the discontinuance of the causes which produce typhoid fever, cholera or smallpox appeal to altogether a different class of considerations and emotions than do those which we have seen, when continued in operation too long, cause nervous exhaustion. A man refuses to recognize the chief cause of his increasing nervousness—insomnia, indigestion, fatigue, vertigo, vacillating judgment, the growth of a variety of fears which supplant his former energy, will and perseverance, until the crash finally comes which lands him in the hospital or the insane asylum.

This same man would vote thousands, if not millions, of dollars from the State, municipal or national treasury to purify and increase the public water supply, or to establish a more effective quarantine against the invasion of foreign-born diseases, but would take none of the warnings from internal or external sources in regard to himself for the purpose of warding off the insidious, but none the less surely approaching, collapse of his physical and nervous forces. We have not far to look for at least two recent and illustrious examples of overwork and sudden exhaustion of heart and brain, as the result of their too strenuous living and doing for the benefit of others, to the sad neglect of themselves—one a great preacher, lecturer and editor, whose long and repeated overdrafts upon a great brain and giant physique finally exhausted his surplus, and cerebral bankruptcy ensued; the other, a loss to our society, whose eulogists recently pronounced him the good physician, the scholar, teacher, citizen and conservator of the public health. In both these lamentable instances of overstrain, warnings of the coming storm were unheeded. Their work went on, at constantly increasing expense to vital resources, until they could no longer respond to the too frequently repeated drafts upon heart and brain.

Another instance of prostration was recently announced in the daily press, of the chancellor of one of our growing universities, who has finally been forced into his bed with a pronounced case of nervous prostration. The laity have accepted many of the causes

of nervous breakdown, and we see discussion of these subjects in the daily papers. Men in the public eye, at the head of great affairs, are cautioned to go slow, to occasionally take a rest and to shift many of their responsibilities to the shoulders of younger and more vigorous men; not to worry, &c. I saw a most excellent editorial in a prominent New York daily not long ago, entitled "Worry Kills More People than Hard Work," which, for richness of illustration, for depth of research, for the statement and classification of statistics, for good reasoning and good advice, would have done credit to the editorial columns of one of our best medical journals. Perhaps it was written or inspired by a medical authority on nervous exhaustion.

When the depressing element of worry is added to any or many of the causes here enumerated the tendency to a rapid wear and tear of the nerve centers is greatly increased and the difficulties of cure correspondingly aggravated and delayed.

The last of a very long list of causes of neurasthenia, to which attention might be drawn, is that set of influences which produce this disease, not only among women, but specifically women who become patients of the gynecologist. Many women who begin to depart from their standard of health jump to the conclusion that the cause of their troubles exists in the pelvis, and frequently in the pelvis alone. They resort for help to the office of the gynecologist, or to that of their family physician with gynecological tendencies, where the symptoms are too often treated for the cause. With a correct diagnosis, a case of neurasthenia may be cured by appropriate management and advice, and its symptoms or results may flee away like snow before the sunshine. We too often make the error of considering the lacerations incident to childbirth, a diseased uterine appendage or a fibroid tumor of the uterus, the *whole* case, and expect the surgical work performed for their relief to speedily bring about a cure, when in reality the nervousness incident to the condition, the mental worry and anxiety and fear, have engrafted on the pelvic condition an added drawback, in the shape of neurasthenia and hysteria, which it takes months to cure.

This phase of the question cannot be too strongly presented, for it frequently arises to torment and embarrass us after sending patients home cured, as we supposed, by our operations. When we learn to appreciate more fully the coexistence of neurasthenia

with the surgical disease, we will not be in so much of a hurry to discharge, as *cured*, our abdominal and plastic operative cases, when they of necessity carry away with them nervous conditions which time, more rest and an appropriate environment alone can heal.

This is as true of the charity class of overworked and underfed, worried and anxious women, as of their more favored sisters who have had their nervous systems broken down by the too heavy exactions of social and fashionable life. The result is about the same, though produced by different and opposite influences.

This department of the subject is so interesting and instructive to study that it is difficult to quit the consideration of the causes and proceed to the mention—for little more can be done—of some of the symptoms of neurasthenia.

To fully describe the symptoms of neurasthenia would be a hopeless as well as an endless task. Weir Mitchell, in referring to this subject, speaks of a patient who told him that she was full of symptoms from head to foot; and Dr. Beard says in his book on this subject that the symptoms of neurasthenia have never yet been fully described, and then proceeds to devote seventy-five pages to a partial elucidation of the subject.

The symptoms, as presented by many patients, are all subjective, many of them illusory and misleading. They tell us how they feel, while their general appearance would indicate just the opposite condition from that so feelingly and graphically described. Thus, robust-looking men, or stout and apparently healthy women, will relate in a whining tone of voice their symptoms of weakness, their inability to endure any prolonged mental or physical strain, their unwillingness to go far from home for fear they would never get safely back again, their complete lack of their accustomed energy, and *absolute* loss of their resolution, will power and courage to face obstacles or discouragements.

Fortunately few persons have all these symptoms at one time; many have only a few of them, while in others when one part of the body is attacked in a new and aggravated form, symptoms of disease of another part appear for the time to let go their hold, and organs formerly invalided resume their normal functions. Some patients who have been suffering from tenderness of the scalp, dilated pupils, sick headaches, and a great variety of head pains—pressure and heaviness in the back of the head and neck, with lightness, dizziness, emptiness, coldness—will one

day describe all these feelings with minuteness of detail and with tiresome emphasis, and another day, with an air of infinite weariness, will declare that they don't know and cannot tell *how* they feel.

Beard declares that when neurasthenia lays its hand on a man it is liable to leave its impress on every organ and function of the body; from the crown to the toe, there is not a fiber that is safe from attack. If some parts escape in one individual, they suffer in another. If, at one stage of the malady, certain regions are unaffected, it may be only that they may be attacked with all the greater violence at another stage. Thus the hair, the scalp, the eyes, the ears, the nasal and respiratory passages, the brain, in whole or in part, the cranial nerves, the heart, the spinal cord, in any portion, the sensory and motor nerves, the stomach and bowels, the reproductive organs, the skin, the nails, the secretions, the excretions, the absorbents—all these, and *all* the rest, are objects of assault. It is not strange, therefore, that there should be a neurasthenic voice, just as there is a neurasthenic eye, or a neurasthenic stomach. Nervous dyspepsia, as they call it, is one of the most difficult, as it is one of the most disagreeable forms of neurasthenia to treat, and this condition, like some of the problems we daily encounter in gynecology, is too frequently treated as the *cause* of the patient's sufferings, when in reality it is only one of the consequences or symptoms of neurasthenia. Indeed, in these days of the splendid development of specialism, I fear that many a symptom, and a reflex symptom at that, is treated long and faithfully in the vain endeavor to remove the cause, having innocently mistaken one for the other.

Deficient mental control, the loss of former powers of concentration, is frequently complained of by the neurasthenic. This is especially noted in the nervously exhausted literary man, public speakers, clergymen, lawyers in addressing the jury in some important case; and later on, in attempting to read on ordinary novel or the newspaper, the mind will wander to such a degree that a sentence may be read over several times, and even then one might not be able to say what he had been reading.

Not long ago Mr. Richard Grant White wrote of a peculiar symptom of this disease which he called "Heterophemy," which is the saying of one thing while meaning another and quite a different thing, sometimes exactly the opposite to what one in-

tends to say. Some interesting questions might arise from the too frequent occurrence of the symptom in domestic and possibly medico-legal circles.

Mental irritability and hopelessness are frequent symptoms, and are all the more noticeable and pitiable from the fact that these states of mind are often the exact opposites to a former serene and cheerful disposition of the patient. Morbid fears form an exceeding strange and interesting class of symptoms, and come very near *to*, if they do not actually overstep, the border lines of insanity. Some of these morbid fears are given very curious names by the writers on nervous diseases. Thus the morbid fear of lightning is called, *astrophobia*; the fear of places, *topophobia*; of open places, *agorophobia*; of narrow places, *claustrophobia*; of man or society, *anthropophobia*; of being alone, *monophobia*; of disease, *pathophobia*; of everything, *pantophobia*; of contamination, *mysophobia*.

It would be very interesting, if the natural limits of such a paper as this permitted, to cite illustrative cases of these various morbid fears. Some of them have such firm control of their victims that any amount of reasoning or persuasion will not, seemingly cannot, overcome the fear which has paramount control.

The unreasonable fear of lightning has such strong possession of the minds of some, who may possibly have only this symptom of neurasthenia, as to drive them to the most uncomfortable and ridiculous performances. The fear of high places is familiar to every one—the sense of giddiness caused by looking down from an elevation, or over a precipice, combined with a strong desire to throw oneself over the brink.

The fear of being alone, or *monophobia*, is capable of producing a great amount of misery, unhappiness and inconvenience. Strong men are afraid to make journeys far from home, for fear they may never be able to return. Beard describes a doctor who was actually unable to go more than a mile from home to visit a patient, on account of this symptom, though he was quite able to saw wood or work in his garden all day long, with no unusual fatigue.

The fear of places is so great in the minds of some neurasthenics that it is next to impossible for them to so far control this morbid symptom as to enable them to visit the place feared unless accompanied by a friend, and even then the mental and

physical disturbance and apprehension are such as to destroy all pleasure and finally to compel their withdrawal. This is especially true in regard to a revisit to the place where these symptoms were first experienced.

I know a physically strong man who was overcome by these fatigue and morbid-fear symptoms while visiting the great cathedral in Cologne. These symptoms were again experienced in the still more beautiful cathedral in Milan, and again in Paris. So that I think it would require a very large sum of money to induce that man to enter another cathedral. His fear now extends to all churches and theaters and public gatherings, so that he is only comfortable while occupying a back seat, with no obstacle to his immediate exit, should he desire to go out.

I had a patient living in the square between 17th and 18th Streets, on H Street, who found it impossible for her to cross 17th Street. When she reached the middle of the street she was brought up short by this fear, and if she persisted her legs would become so weak, and her head and heart so dizzy and faint that she could hardly stand. On several occasions this morbid fear prevented her from crossing this particular street. She tried the experiment of walking around the square, and attempted to cross 17th Street at another corner, but the same symptoms recurred, and the only way she could get down town was to drive in a closed carriage or in a street car. This patient only recovered from this symptom after an absence of several years from the city, and upon her return, she located at a boarding house near 15th Street. But with her restoration to health, she found that this fear did not return, even when she crossed that particular street.

I have been told by several neurasthenic patients that they had walked up and down the street in front of my office a number of times before they could summon sufficient courage to enter, and by others that, after mounting the steps, they could not bring themselves up to the point of ringing the bell.

Monophobia, the fear of man or of society, or gynophobia, the fear of woman, has worked some wonderful transformations in both sexes.

Persons who have greatly enjoyed and been brilliant ornaments to society have, some gradually, others suddenly, withdrawn *absolutely* from their former habits and customs, greatly to the surprise, and in some cases displeasure, of their relatives and friends.

Nothing could induce them to enter a crowded ball room where there was music and dancing.

Business men have lost prestige in the busy marts of trade by their fear of meeting engagements and entering into competition with their rivals and opponents. They stay away from directors' meetings and boards of which they are honored members on account of this fear, though perfectly able physically to attend. They are under the influence or control of this neurasthenic symptom, technically called anthropophobia.

Pathophobia, or the fear of disease, is an old and familiar symptom, but presented to us now by the neurologists under this new name. We used to call these patients hypochondriacs. They enjoy feeble health, in the etymological sense, and are one of the most difficult and patience-taxing classes of neurasthenics with whom to make satisfactory progress.

Another morbid fear—the last to be named, though there are many more which it would be interesting to mention and describe—mysophobia, or the fear of contamination, takes some of its victims clear over the border line of insanity. The great distinction between these morbid neurasthenic fears and insanity is, to my mind, that they are totally unaccompanied by any delusions or hallucinations, while in the insane these added conditions are the most prominent and difficult features to manage. These fears are frequently associated with other symptoms of neurasthenia.

Hammond was the first to describe this morbid fear. He knew one lady afflicted with it, who would wash her hands at least two hundred times daily. Not like Lady Macbeth, who declared, in spite of all her washings, that the damned spot would not out. She imagined that she was defiled or contaminated by almost everything she touched. Beard had a very uncomfortable patient who would not sit down in his own or any one else's house, without first taking out his handkerchief and dusting off the seat, and another who was almost constantly brushing his clothes. He had several times been known to rise in the night and give his clothes a most thorough brushing, sometimes shaking them out of the open window, so as to keep the dust from them from defiling or polluting the air of his sleeping room.

We meet some neurasthenics who present at the same time well-marked symptoms of cerebrasthenia or myelasthenia, or both. Cases of traumatic neurasthenia are not unfamiliar to railroad sur-

geons, who have to deal with that class of patients who have undergone physical injuries or nervous shocks in railroad accidents. Indeed, the subjective neurasthenic symptoms are often the most intangible and difficult to relieve. I met with a case of traumatic neurasthenia several years ago, complicated with cerebraesthesia, in an intellectual university student, who had been so injured in a football game as to be carried off the field in an unconscious condition. He saw a number of good physicians in several cities, all of whom wisely agreed that the continuance of his university course would result in permanently impaired health, mental as well as physical. A year's rest and change, European travel and country life completely and permanently restored him to health.

If he had unwisely tried the opposite and too often attempted course of keeping on with his studies, and taking drugs to ameliorate his symptoms he would have been much longer regaining his mental and physical powers, and he might never have fully succeeded.

The recent paper by Dr. W. W. Johnston on the neurasthenic history of Charles Darwin gives a most illustrious example of the continued ill health of a great man who refused to take the necessary rest in which to recover from the overwork which had caused his breakdown. Dr. Johnston insisted in his most timely and interesting paper that if Darwin had taken a year off from *all* mental work and had taken a complete rest, with a change of environment, his health might have been fully restored. He drew important lessons from this example, and gave timely and excellent advice for all similar cases.

Many other and equally disturbing symptoms claim equally our attention with those already mentioned, but I can only rapidly name them, without further delay upon this part of our subject: Flushing and frequent blushing and general fidgetiness, bad dreams, insomnia, drowsiness, desire for stimulants and narcotics, abnormal dryness of the skin, joints and mucous membranes, sweating of the hands and feet, tenderness of spine and of the whole body at times, coccygodynia, backache, especially in women; shooting pains, variable pulse and palpitation of the heart; local spasms of muscles; cramps, awakening with a jump and jerking of the arms or legs; special idiosyncrasies in regard to food, medicines and clothing; localized peripheral numbness and hyperesthesia; a feeling of profound exhaustion unaccompanied

by pain ; ticklishness, vague pains and flying neuralgias, general or local itching, cold feet and clammy hands, nervous chills, temporary paralysis, involuntary emissions, partial or complete impotence and a long list of capricious and unclassifiable symptoms still too numerous to even mention.

A prominent writer on this subject declares that "nervous exhaustion with many or all of these symptoms is compatible with the appearance of perfect health. * * * Sometimes they are fat and hearty and have a ruddy, vigorous, strength-suggesting appearance—sometimes also they grow fatter as they grow worse. Thus it happens that a patient gets the least sympathy when he most needs it." Beard closes his chapter on symptoms of neurasthenia in these words : "It cannot be repeated too often, that a patient may be of great size and weight, and have a muscular development both large and hard, capable of great physical endurance, and at the same time be, in his nervous system, as weak as a bed-ridden hysterical girl."

Some of the results of this modern disease may be very briefly alluded to before passing on to the treatment. Contrary to the excited fears of some patients, and the more quiet and grave apprehensions of others, neurasthenics are frequently long-lived persons. If no organic disease of vital organs exist, the care they are finally forced to take of themselves makes them live longer than the average citizen, though in some isolated instances a refusal or neglect to secure proper medical advice, or to follow it when received, produces results little short of intentional suicide.

Neurasthenics and cerebrasthenics appear less susceptible to the ordinary diseases of the human race. They appear to have troubles enough of their own. The acute inflammatory and infectious diseases are said to be more seldom seen in this class of patients. As this "mimicry of disease," as Dr. Weir Mitchell calls it, is so often only functional, it is exceedingly important, both for the comfort of the patient as well as the reputation of his physician, that a correct differential diagnosis shall be made between the organic disease which it simulates and with which it is too often confounded. Modern authorities state that "the symptoms of organic disease are usually fixed and stable, while very many of those of neurasthenia and allied states are fleeting, transient, metastatic and recurrent."

The treatment of neurasthenia, to be successful and permanent,

must apply its remedies to the many changing conditions of this changeable disease. It is not possible to set the rudder so that a ship may steer straight across the Atlantic; it must be watched each moment and shifted with the winds and currents. It is just as impossible, we are told—and we know it by experience—to steer a neurasthenic sufferer over his long voyage to health with a single prescription. Beard declares that “each case of neurasthenia is a study by itself. No two cases are alike in all details. If two cases are treated precisely alike, from beginning to end, it is probable that one of them is treated wrong.”

I have for years insisted that a patient should have a complete change and rest from the conditions and environment which produce the nervous breakdown. Sometimes this alone will, in a few months, or a year, result in a complete restoration to health without resorting to the use of any drugs whatever.

While the “rest cure,” as inaugurated by Weir Mitchell—and which consists principally of isolation from sympathetic friends and relatives, massage, the Faradic current, absolute rest in bed, under the care of a competent trained nurse, and high feeding—will be the appropriate treatment for one class of patients, just the opposite—or the “work cure”—will be necessary to restore another class, who have become nervously exhausted from a totally different set of causes. To give one patient the “rest cure,” for whom the “work cure” is most necessary, and *vice versa*, would be equally fatal to both. It would evidently be adding fuel to the flame to set a patient to climbing mountains and rowing a boat all day in the Adirondacks who had a weak heart and exhausted muscles from over-fatigue or from an exacting business, from which he was already tired out. That patient should be placed at rest and his or her exhausted nervous forces recuperated by the Weir Mitchell plan, or some appropriate modification of it. A neurasthenic editor, business manager, author or scientific worker or inventor might profitably be sent on a trip around the world, to hibernate in the country, to saw wood and dig potatoes, thus absolutely changing the cell exhaustion in his brain and spinal cord.

Dr. Foster, of St. Elizabeth Asylum, gave us a most elaborate and scientific paper not long ago upon the nature of the cell exhaustion in the brain and nervous systems which occurs in anemia, hysteria, neurasthenia, cerebrasthenia, myelasthenia and

insanity. These important and interesting topics are both beyond the scope of this paper and my knowledge of the subject, but I can readily see how his instruments of precision, so to speak, if they could locate the exhausted cells as the X-ray does a bullet in the body, would aid us immensely in fitting our punishments to cure the crimes of omission and commission against dame Nature.

We find nowadays that occasional cases in gynecology are better and more successfully treated by neurasthenic, rather than exclusively local or pelvic, methods. Many nervous women applying to the gynecologist for some real or fancied pelvic disease have been driven to his office by a combination of symptoms which only a combination of treatment will cure.

If the patient is broken down from the fatigues, worries and exertions of domestic or social life, the removal of coexisting ovarian growth, the restoration of a lacerated cervix or perineum will only cure her of one-half her troubles, and the other half of her cure consists in providing the necessary change and rest which her exhausted nervous system demands. Some of the excellent and brilliant surgical work done in this department has failed of the early and complete cure expected, and sometimes unwisely promised, on account of our failure to sufficiently recognize the neurasthenic element in the case. The converse of this statement is equally true. Gynecologists have over and over again restored nervous and physical wrecks of women to their former good health by performing one of the operations just referred to in cases where the neurologists had failed to appreciate the other half of the cause of the nervous prostration. They had done what they could for their half, but they had lost, or, what is more likely, never had realized the combination. Drs. Weir Mitchell and Goodell, in Philadelphia, used to do splendid team work in the management of these cases.

Little more can be done in a paper like this than to indicate the principles of treatment for the relief of such a vast array of peculiar and contradictory symptoms as have already been mentioned. Much less than in other diseases are drugs available. When used to any extent for the relief of chronic neurotic and erotic symptoms, the drug habit will sometimes create a situation which is infinitely worse than the one prescribed for.

The grand principles of change and rest are the strings of the harp that we must constantly play upon. The illustration in

Flint's "Practice of Medicine" in regard to the impossibility of curing a soldier of malaria who was compelled to perform picket duty at night in a swamp, is equally applicable in our present contention. It is just as impossible for a neurasthenic stock-broker, lawyer, bank manager, society leader, or any other person nervously exhausted, to get well while the causes of the prostration are still operating. A changed environment and a rest from the particular kind of occupation are essential to a cure.

I have a nervous lady under my care now whom I once heard call out to one of the playful and somewhat noisy children in an adjoining room, "Josephine, whatever you are doing in there, stop it." This must be our cry to our advanced cases of neurasthenia. Whatever brought on your troubles, "stop it," and about face and march in the opposite direction.

Of course, intelligently applied, medicines will be occasionally necessary to relieve pain, secure sleep, aid digestion, and for tonic and sedative purposes. But I repeat again and again that, in my humble judgment, our chief reliance must be upon *rest* and *change*, as well as upon rest in change.

Institutional treatment has many prominent advocates. They claim that the requisite isolation from business and excitements and fatigues cannot be secured at home, and that control and management necessary to secure rest and quiet for mind and body can only be provided in a small hospital or sanitarium where discipline and a kind of military order prevail.

The details of the Weir Mitchell "rest cure" can certainly be more systematically carried out, in the interest of aggravated cases, in a quiet and properly conducted hospital than in a noisy hotel or boarding house. The attempt to secure isolation, under the care of a trained nurse, in a patient's home, ends generally in a dismal failure.

Perhaps we see more cases of partial or threatened nervous exhaustion than of complete breakdown of the nervous system, especially among men of affairs. It is in this class of cases—they being the most numerous—where the greatest good can be done by wise advice in regard to slacking their pace, taking more rest, more recreation, more trips in the country, fishing, hunting, playing golf, horseback riding, etc., etc.

Golf is said to be the neurasthenic's game. The bicycle ride compels the mind to be diverted from the harassing cares of busi-

ness and devoted to self-preservation. This class of half-sick business men is greatly benefited also by the purchase of a small farm so near the city that one can drive out in the country in the afternoons and personally superintend its management. The building of fences, the reclaiming of woodland for agricultural purposes, the management of farm interests, the planting of crops, the raising of chickens, cows, pigs and sheep—all have interesting, occupying and diverting uses, which calm excited nerves, give healthful exercise to body and mind, and bring about and establish that change and rest so essential to a neurasthenic.

To compel a complete retirement from the control of an active and lucrative business places an ambitious man in a pitiable position. I know of cases where harm instead of good has resulted from such a course. We see instances of this kind in the legal retirement of officers of the army and navy who have reached the age limit, but who are still in a fair degree of health. The army and navy surgeons tell me that some of them soon become habitués of their offices, and, having nothing else to do, think too much of their health and become more or less of hypochondriacs.

The management of a farm would be a boon to this class and similarly situated men of leisure.

The peaceful pursuit of agriculture has a bracing, healthful and even ennobling effect upon its followers. Mr. Gladstone once said that the man who made two blades of grass grow where only one grew before was a benefactor of the human race. It was stated in the outset of this paper that very few cases of neurasthenia originated in the agricultural districts. Why not send your half-sick victims of this progressive disease to this most healthful and restful of occupations. The indication would be met in that proportion of our cases where the "work cure" was better than the "rest cure," by sending them to the outdoor life of the farm instead of the indoor life of the hospital.

In closing this paper, already too long, I beg to quote a brief extract from a sermon of the younger Talmage upon the life and death of his father. He preaches very good medical doctrines. He says that "about twenty-five years ago the great preacher received the first warning, when the danger signal of insomnia was lifted, and, like a hideous spectre, sat at the foot of his bed and refused to let him sleep. Night after night he would be up four or five times walking the floor, * * but he could

not be induced to spare himself. He overestimated his reserve strength. My father ought to have lived, with that magnificent body, at least fifteen years longer. Had he economized his strength, the best years of his life might have been those fifteen years, but he died from overwork.

"Ye brain workers, listen to this warning! Ye literary men, who are full of great thoughts which you are eager to utter, beware of overdriving the brain! Remember that you cannot take your workshop to bed with you and work on in the dark without undermining your mental strength. Heed to-day the message which comes to all. Stop before it is too late. God did not intend my father to go on as he was doing, wrecking his magnificent physical frame, but his intense application to work deserves the attention of all those who are bending their physical, mental and spiritual energies to accomplish something in life's struggle."

DISCUSSION.

Dr. A. B. Richardson said that he could add but little to Dr. Johnson's interesting and exhaustive paper, but he was keenly interested in the subject of neurasthenia and its treatment, and could not lose the opportunity to express his views. He laid stress on the fact that the term was too loosely applied; it was often used as a cloak to cover up ignorance or doubt as to the exact nature of the case in hand. The term should be applied only to purely functional cases. Concerning the etiology, he was not entirely in accord with the classification set forth in the books. To his mind the prominent etiological factors were: (1) a hereditary or congenital defect in nerve tissue; (2) an error in physical condition closely connected with malnutrition and imperfect assimilation, and (3) overstrain. Any one of these might be the most prominent feature in a given case, but examination would show that the other two are present also. The disease was essentially functional, and by nature hereditary predisposition played an important part in its origin.

It is possible to aggravate or even produce neurasthenia by improper treatment. A rise in subjective consciousness, having its seat in hereditary predisposition and an undue instability of the nervous system, was the most prominent symptom of neurasthenia, and care should be taken that the treatment does no harm by increasing the already-existing concentration of the patient's attention on his own condition.

He took exception to some of the symptoms commonly classified as neurasthenic—*e. g.*, the "phobias." He would be inclined to look with apprehension upon a well-fixed "phobia," as being an

early stage of insanity. The possibility of this dread disease was not infrequently overlooked because a diagnosis of "nervous exhaustion" seemed to fill all the requirements of the case. The necessity for employing great care and discrimination in making a diagnosis of neurasthenia was self-evident.

Traumatic Cases.—He had had considerable experience in medico-legal cases of this kind. In most of them the trouble is supposed to be purely the result of the injury sustained by the patient, whereas, as a matter of fact, a pre-existing soil of neurasthenia can always be demonstrated by careful examination. He related a case in point. A woman who was supposed to have been previously healthy was injured by a telephone company in Columbus, O.; neurasthenic symptoms developed, and she sued the company, and got judgment. After she received the money the symptoms disappeared with remarkable rapidity. This woman had no intention of practicing deceit, but the concentration of her attention upon herself brought to prominence psychic symptoms of a neurasthenic character; undoubtedly she was predisposed, by heredity or otherwise, to neurasthenia. As Dr. Johnson had said, the habit of introspection caused by a local malady might persist and give trouble long after the local disease is cured.

The treatment must be adapted to the case in hand. Having psychic exhaustion, mental overstrain, etc., one should not make the mistake of attempting to bring about a cure by adding *physical* overstrain. The patient should first have both physical and mental rest, and, after improvement sets in, carefully regulated exercise.

Dr. Vincent said that he could add but little to what had already been said. Three points were worthy of attention: 1. The ease with which an incipient condition of neurasthenia can be overlooked. 2. The tendency to classify organic troubles as neurasthenic; in some cities neurasthenia is not accepted upon certificates as a cause of death because the term is used so often as a cloak to cover other diseases. 3. The necessity for making a correct and accurate diagnosis, being careful to exclude lesions of an organic nature. The symptoms were too numerous and varied to recount. The ground had been well covered by the previous speakers.

Treatment.—It was difficult for the poorer class of patients to carry out the most essential part of the treatment, viz: rest; not rest for a week or two, but absolute freedom from business and family cares for a considerable length of time. Many patients could not afford this, and some of them undertook to palliate their trouble by the use of drugs, alcohol, etc. Thus neurasthenia was one of the causes of drug habits. Fortunately, however, in the majority of instances, the disease attacked the well-to-do.

He had observed many cases of neurasthenia among railroad engineers; the number of such cases was remarkable. The most

essential part of the treatment for them was rest. Many cases were seen among naval officers after their retirement from active and busy life. The *kind* of rest was important. Weir Mitchell's method—absolute rest, etc.—was good in some cases; in others, moderate exercise from the start gave the best results.

Dr. Vale said he believed we were mistaken in regarding neurasthenia as a modern disease, at least that was his impression from general medical reading. He had in mind the medical essays of Jas. Johnstone, published in 1795, one of which detailed the case of one Lord George Lytton and was certainly a neurasthenic history; the author regarded the symptoms as the result of exhaustion of the nervous system from overwork, and took occasion to warn the man of sedentary and studious habits to be careful of his hours of recreation. In 1858, Bouchut published a treatise on "Nervosisme," and described perfectly what Beard later termed neurasthenia. Bouchut gives quite a list of titles under which the same condition had been previously described, and states that, among other old authors, perfect descriptions of the condition are to be found in the writings of Sydenham, though confounded with hysteria and hypochondriasis. Many cases could be found detailed under the head of spinal irritation, a condition described by Black in 1828.

Dr. Vale said, further, he thought it was a mistake to call neurasthenia a disease; it was no more a disease than inflammation. At least he thought it would aid our pathological conceptions if we regarded it simply as an exaggeration of a physiological condition, fatigue—for fatigue within certain limits is physiological. We are not surprised at the meagreness of these conceptions when we consider how little physiology teaches us about what we call nerve energy. How much better off are we to-day in our knowledge of this "vital principle" than we were two hundred years ago, when physiologists talked about the "animal spirit" or "animal fluid," which was supposed to flow along the nerve trunks, the interruption of which produced loss of motion and sensation? It is true we have reduced physiology to certain physical and chemical laws, but behind all there is a force which sets this machinery in motion, a force we call nerve energy or nerve force. Some persons seem to be born with an inadequate supply of nerve energy, and this is where we get our hereditary neurasthenics. In all acquired neurasthenias a susceptibility to irritation, *i. e.*, a susceptibility to fatigue, seems to play an important part. It is a matter of common observation, for instance, that one man can go through life in comfort with an uncorrected refractive error, while in another, the same condition, or a muscular insufficiency, produces all sorts of nervous symptoms.

So that in the treatment of neurasthenia we strive to remove all sources of irritation, of fatigue. In a general way we inquire into

the patient's environments, and regulate his habits and career as far as possible. Then we look for local sources of irritation—not that all local symptoms, by any means, have a local cause. The oculist has called attention to the necessity of correcting refractive errors and muscular insufficiencies; the rhinologist to the general disturbances which can be set up by nasal obstruction; the genito-urinary surgeon to inflammations of the posterior urethra and seminal vesicles as conditions capable of disturbing the equilibrium of the nervous system. The gastrologist, agreeing with Glenard, points to gastropareses as the probable origin of all neurasthenias, while his confrere, agreeing with Buchard, believes all cases to be traceable to an auto-intoxication from the gastro-intestinal tract. We must call attention to other poisons capable of irritating the nervous system to the manifestation of neurasthenic symptoms, as alcohol, which is probably a greater factor than our modern methods of living, so strongly insisted on by the essayist. Who also does not know how neurasthenic symptoms may mask a grave organic disease like carcinoma? And here, too, we have a toxemia as the cause. The French especially have written upon yet another variety of toxemia as a frequent cause of neurasthenic symptoms—namely, the end-products of nitrogenous waste—especially uric acid. In this class the rest cure is not only useless, but does harm. It is in this class that the French have used with such success their currents of high frequency and high tension, D'Arsonval and others having proved that these currents greatly increase the elimination of those products and the rate of gaseous interchange in the lungs; so that this is one branch of electrotherapeutics which is no longer empirical, but has been placed on a perfectly rational basis. In Dr. Vale's system of therapeutics the use of these currents was as well established in the treatment of this disease as the use of the knife in opening an abscess.

With regard to the diagnosis, and the remarks of Dr. Richardson, he would say that it is often tentative. The physician recognizes perfectly that some grave organic disease may be masked by the neurasthenic symptoms, and is constantly on the lookout for such a cause, in the meantime of necessity being satisfied with an assignment of the case to the neurasthenic class. He mentioned a case of paresis, one of *tabes dorsalis* and one of carcinoma of the intestines as applicable in that connection.

Dr. Mary A. Parsons said she was very glad to have heard the various points brought out during the discussion of Dr. Johnson's able and most interesting paper. She was more than glad to hear the marked change of opinion advanced by our gynecological surgeons, when they give to gynecological surgery its proper place as one factor only in the cure of neurasthenic cases, rather than to claim it as the sole method of cure, as was the opinion advanced twelve or fifteen years ago.

In the enthusiasm of a new method oöphorectomy was claimed

to be the one and only sure and certain remedy for feminine ills—a panacea for every disease of woman, from epilepsy to blindness.

It is not altogether strange that a reaction from such radical views should take place, but it is wise to remember the danger that in the swing of the pendulum popular opinion may be carried too far in the opposite direction, and she feared such tendency was obtaining in present practice.

There was danger always that we may ignore much that is of value in surgical intervention among neurasthenic women. No woman can be expected to recover normal nerve tone who drags a heavy uterus at the perineal floor, or carries a sharp ante or retroflexion, bound down by firm adhesions which produce nerve crises at each menstrual period.

Degenerated mucous membrane, or degenerated uterine tissue and abnormal vaginal discharges are infective, and through reabsorption send poison through the entire system. These facts must not be ignored, and each patient must be made to understand that until these conditions are removed she cannot hope for cure, and also that sufficient time must be allowed for recuperation from the complications they have produced.

I wish to emphasize and re-emphasize the point so strongly brought out by Dr. Richardson, that more careful diagnosis and closer discrimination in classification must be made before we can expect to have brilliant or even passable results from treatment. The present nomenclature includes the hysterical woman of society, the overworked man of science, the hereditary degenerate, the undisciplined child, the victim of vicious habits and the wreck from unbridled passion, all under the one head of neurasthenia. But in treatment the range is from the inherited "disequilibrium of nerve centers," and prenatal deficiency to every known grade of acquired inefficiency.

A pre-surgical neurasthenia produced by absorption of infective material, or the strain from prolonged and excessive anxiety, and a post-surgical neurasthenia which may be the result of shock, hemorrhage, malnutrition or hospitalism, will demand radically different treatment. The neurotic element, either hereditary or acquired, which produced the criminal, demands different measures from the neurotic condition which has been produced by the punishment of criminality.

In our penal institutions the solitary confinement, hard labor, poor food, bad air, depressing environment and mental stress produce conditions which require years to overcome. Nothing appeals more strongly to the sense of humanity than the blanched faces and flabby muscles, the defibrinated blood and paranoic mental attitude of these criminals—these men upon whom the State has set its seal. An old criminal returned to a forgiving, hoping family, or a young criminal with only a dubious future in which to retrieve a positive past, stands in a very different relationship

to the physician from the young girl whose social success has been her physical ruin.

Dr. Rhett took exception to the statement made by Dr. Richardson, that he preferred the term melancholia. This was quite a different disease; one was functional, and the other was organic. Neither did he agree with Dr. Johnson that nervous exhaustion was a disease of men of affairs alone; he had seen many mild cases in men who had few or no affairs at all. It was liable to attack any one who was subjected to worry, and worry was the bane of rich and poor alike. Dr. Johnson's paper was very interesting. He wished that he had paid more attention to such points as how to make fat and blood, and how to make the patient sleep—the three great desiderata of treatment. There was one peculiar feature of the disease, viz: that some patients required rest, while others with similar symptoms must have pleasurable occupation; it suggested the possibility of a further division of the disease into two types. One of his patients, whom he advised to take a sea trip, slept 32 out of the first 43 hours on shipboard.

Dr. Johnson, in closing the discussion, recalled the fact that he had remarked at the beginning of his paper that he could not cover all the interesting points about neurasthenia in the time allowed. He agreed with Dr. Richardson that the term was often used indiscriminately, and that there was need of greater care in differentiating between the symptoms of hysteria, melancholia and other nervous affections, and those of neurasthenia. The border-line was often hard to draw, and neurasthenic patients not infrequently feared that they might become insane. As a matter of fact, however, this very rarely happened, and neurasthenia was almost never fatal. The physician should be able, even in the early stages, to differentiate between the symptoms of insanity and those of neurasthenia; the latter was a functional disease; insanity was due to organic changes. He could not agree with Dr. Richardson that the "phobias" usually develop into insanity, unless organic disease is present from the start. He also differed from the opinion expressed by Dr. Vale, and reiterated his belief and agreed with Dr. Vincent that neurasthenia was a modern disease due largely to the rapid pace at which we live, a pace which was not known a hundred years ago.

Dr. Parsons had perhaps spoken a little too strongly concerning "operations as a panacea for all feminine ills," but, while opinion in the past had undoubtedly leaned too far toward operative treatment as a cure for neurasthenia in women suffering from local organic pelvic troubles, now, as a result of experience, our views had undergone a change, and we were coming back nearer to the proper point. This was true of all specialties. As we grow we gradually explode and get beyond old theories. Much more than operation was required for the cure of any case of neurasthenia;

and, as had been stated, a cure was impossible in many cases without operation to relieve a local disease which lay at the root of the neurasthenic condition. In conclusion, Dr. Johnson expressed his thanks to those who had participated in the discussion.

CASE OF OVARIAN TUMOR, WITH TWISTED PEDICLE AND MYXO-FIBROMA OF ROUND LIGAMENT IN SAME PATIENT.*

By D. G. LEWIS, M. D.,

Washington, D. C.

I present here two tumors removed from the same patient a few days ago. The larger tumor is a multilocular ovarian cyst in an advanced stage of degeneration, this condition resulting from interference with the circulation by a complete twist of the pedicle.

The smaller tumor was removed from the right inguinal canal, and is a myxo-fibroma of the round ligament. This growth was mistaken by her family physician for an inguinal hernia, and he stated that he worked for two hours in his efforts to reduce it.

Mrs. S., age 37, white; her mother died at 59, from tumor of breast; father died at 59, from apoplexy; three brothers living and in good health. Menstruation began at 14; was always regular and free from much pain. General health good. Married at 21; four living children, one stillborn; all her labors easy, including the last, when she was carrying this large tumor.

About two years ago first noticed slight enlargement of abdomen. This steadily increased until last December, when she was delivered, in an easy labor, of a fine, healthy child. The presence of the tumor was at once recognized by her physician, who tapped her seven days after the child was born, removing quite a large quantity of fluid.

In June, 1901, she noticed what she supposed to be a hernia in right groin; since that date it had steadily grown until it reached its present size, and caused her much pain.

The abdomen was opened by a median incision about 4 inches long, between umbilicus and pubis. About two gallons of fluid and a large quantity of material of the consistency of lard were drawn off. The cyst wall was very friable, and when clamped

* Reported with specimen to the Medical Society of the District of Columbia April 2, 1902.

with forceps it easily pulled apart. The pedicle showed a complete twist, which accounted for the condition of the new growth. The tumor was removed and abdomen closed with through and through silkworm gut sutures. The tumor of the round ligament was next removed and the stump sutured into the internal abdominal ring.

I present these specimens; the ovarian tumor because of the comparative rarity of large ovarian tumors, because of its co-existence with pregnancy and not interfering with a normal delivery, and because of the twisted pedicle causing a dangerous degeneration. The tumor of the round ligament is interesting from the diagnostic standpoint and on account of the comparative rarity of such tumors.

DISCUSSION.

Dr. Chappell related the case of a woman whom he saw for supposed pregnancy. He examined her as carefully as circumstances permitted, and gave an opinion in the affirmative. There was not enough evidence of a tumor to attract his attention, but he learned afterward that her accoucheur had tapped her after delivery. The lesson to be learned from this experience was that one should be very thorough in examining pregnant women.

Dr. Bovée.—The case was interesting, as it illustrated an obsolete form of treatment, viz: the tapping of ovarian cysts after parturition. The proper method was to remove the cyst soon after delivery, and not to tap it. The twisting of the pedicle was also interesting; the tapping probably had something to do with its production. He inquired whether the torsion appeared suddenly, or slowly.

Dr. Lewis replied: Shortly after labor.

Dr. Bovée asked Dr. Lewis whether he had mistaken the tumor in the second case for a hernia; the mistake was frequently made. He related a similar case, both as to diagnosis and condition; the tumor was really a cyst of the round ligament—a rare condition.

Dr. Behrend said that he had seen cases in which there was no appearance whatever of a tumor before labor, but afterward he thought, from the size of the abdomen, that he had a case of twins to deal with. In one case the tumor turned out to be a large sarcoma; it was removed by Dr. J. Taber Johnson on the fifth day after labor. This showed how soon after parturition such growths can be removed with safety.

Dr. Lewis, in closing, endorsed what Dr. Bovée had said. He had advised removal of the growth before labor. At first he thought he had to deal with a hernia. The patient made an uninterrupted recovery.

TWO CASES OF TUBERCULAR MENINGITIS.*

BY S. S. ADAMS, A. M., M. D.,

Washington, D. C.

1. A. S., a colored girl, age 8½ years, was admitted to Children's Hospital, Washington, March 26, 1902. Her father had some cardiac disorder; her mother was very subject to recurring rheumatic attacks. Strong tubercular history on maternal side. No specific history.

Patient was breast fed until 19 months old, then on a mixed diet; dentition at 5 months. Measles at 3 years, good recovery; whooping cough and influenza at 6 years; perfect recoveries. About four weeks before admission she had headache, abdominal pain, anorexia, photophobia and general malaise; ten days before entrance the symptoms became much aggravated; she was drowsy, semi-conscious, had low delirium; no vomiting; one convulsion; slight fever; bowels obstinately constipated. A slight improvement, lasting two days, was followed by a semi-comatose condition.

When admitted she was markedly emaciated, very dull and apathetic; servical glands enlarged; loose bronchial cough; no expectoration; respirations shallow and sighing; physical signs showed marked involvement of lungs, especially at apices; tongue heavily coated; complete anorexia; swallowed with difficulty; bowels moved only by repeated enemas; heart sounds weak and irregular; pulse rapid, at times intermittent, and of low tension. She lay on her left side with limbs flexed, eyes closed; muttering constantly; muscles of face active, and when disturbed she became very restless and wildly excited, crying aloud as if in pain, but rapidly relapsing into a condition of semi-coma; pupils widely dilated and sluggish; slight convulsive movements of arms; constantly trying to pull at mouth and nose; slight retraction of head at times; micturition involuntary, but sufficient in quantity; temperature between 101 and 98.6; respirations between 18 and 60, and pulse varied between 128 and 190.

Her condition became steadily worse; complete coma came on, and she died within forty-eight hours after admission.

The necropsy by Dr. Thomas Grasty showed general miliary tuberculosis; tubercles in lungs, liver, spleen and intestinal and

* Reported with specimens to the Medical Society of the District of Columbia, April 2, 1902.

bronchial glands. The brain presented a characteristic appearance; small granulations over cortex and along superior longitudinal fissure, along the course of blood vessels; fibrino-purulent exudation between pia and cerebral convolutions generally present over base, especially well marked in fissure of Sylvius; this exudation extended also to cerebellum and medulla and along the sheaths of the cranial nerves; ventricles much distended; marked congestion everywhere present; the lungs were universally involved; no cavities. The tubercle bacillus was demonstrated.

2. D. T., a colored girl, age 5 years, was admitted to Children's Hospital, Washington, February 28, 1902. An only child; no tubercular or specific history; breast fed one year, then on a mixed diet; had always been very healthy. Three months ago had pain in right leg, which persisted in varying degrees up to two weeks before admission. At intervals of from two to three weeks, she was nauseated and had gastric pain; sometimes vomited; had cough and constant and severe frontal headache. She had a dactylitis also, involving the little finger of right hand, of four weeks' standing.

When admitted she was very dull, and lay quietly on left side with limbs flexed; was much emaciated; below head of left tibia was a sharp, bony protuberance, and the shaft of the bone was laterally curved; no enlargements of glands. A few mucous rales were heard over right lung posteriorly; respiration shallow, jerky and abdominal; lips dry and cracked; tongue heavily coated. She took nourishment fairly well, vomited frequently, no nausea; was very stupid, restless and excited when disturbed; no motor symptoms; sensation seemed unimpaired; pupils irregular; head retracted; headache constant, usually frontal; skin somewhat hyperaesthetic; pulse accelerated and irregular; heart sounds weak, no murmurs; urine dark and contained a slight trace of albumin; no casts.

Her condition steadily became worse; stupor was deeper and more continuous; continued to vomit; pupils dilated and responded slowly to light; abdomen retracted; muscular twitchings and mild convulsive attacks; pulse and respirations intermittent. Then followed coma; Cheyne-Stokes respirations, spastic conditions of arms and legs; and she died March 10th; temperature, 107.4 degrees.

Lumbar puncture was twice done, and three drachms and three ounces of slightly cloudy cerebro-spinal fluid obtained, with no

apparent effect on general condition. Cultures made, showed from the first tapping a very small diplococcus, which could not be satisfactorily demonstrated and was finally lost; no tubercle bacilli found.

March 5th, five days before death, a vaginal discharge was noticed and gonococcus demonstrated.

The necropsy by Dr. Thomas Grasty showed marked tubercular involvement of lungs, liver, spleen and brain; miliary tubercles everywhere.

The cranial dura mater was thickened and congested; over the sides of the superior longitudinal fissure were many tubercles; brain much congested and softened; ventricles filled with fluid; over the motor region on right side was a small blood clot. At base of brain the pia-arachnoid was much thickened and bound down; lobes adherent; small gritty millet seed masses everywhere and fibrinous exudate. The tubercle bacillus was demonstrated.

DISCUSSION.

Dr. Acker said that there could be no doubt of the correctness of the diagnosis in the case which terminated fatally within 24 hours, as it was confirmed at the autopsy. It was not always easy to distinguish between cerebro-spinal meningitis and the tubercular form of the disease. The finding of the diplococcus simplified the matter.

Dr. Behrend asked what was the significance of the presence of the gonococcus.

Dr. Acker replied that, although the germ was present, he did not know that it had any particular significance.

WASHINGTON MEDICAL ANNALS is the title of a bi-monthly octavo of 92 pages, which is the Journal of the Medical Society of the District of Columbia. The subscription price is \$1.00 per year, in advance. The Editorial Committee is composed of Drs. D. S. Lamb, Walter A. Wells and V. B. Jackson. This journal is well printed, on good paper and is a real credit to the Society which issues it. The contributions are much above the average and are evidence of the high class of papers which are read. The ANNALS will certainly have many subscribers outside of the membership of the Society. [*St. Louis Medical and Surgical Journal*, June, 1902.]

CASE OF LARGE FIBROID OF BROAD LIGAMENT.*

By J. WESLEY BOVÉE, M. D.,

Washington, D. C.

Dr. Bovée removed the tumor from a spinster of 37 years, who had first noticed the growth 6 years before. She was anemic from loss of blood and very nervous. The growth was somewhat fixed, and extended from low down in the pelvis to the umbilicus. When the abdomen was opened the mass was found to have developed in the right broad ligament, and was the largest of this variety he had seen. It was removed by Pryor's method of cutting down on one side of uterus and appendage, through the uterine body, clamping vessels as they appeared, and up on the other side. The ureter was first traced downward along the inner side of the growth, and was avoided by the sense of sight during the removal of the growth. This operation is the best he knew for large broad ligament fibroids, and if the location of the ureter is first ascertained, no danger of injuring it will likely occur during the operation.

DISCUSSION.

Dr. Parsons said that this patient had been under her care a few times. She discovered the tumor, which was about the size of an orange, at the first consultation, and advised its removal. She repeated this advice a year later, and again in January last.

CASE OF EXCISION OF RECTUM FOR INCURABLE STRICTURE.†

By I. S. STONE, M. D.,

Washington, D. C.

Mrs. W., age 39, was referred to me by Dr. Kelly, of this city, for treatment of a rectal stricture which had resisted several dilations. She was admitted to Columbia Hospital, and, after a thorough dilatation, left the hospital without consenting to a radical operation. Later on she returned, and, finding that she had double pus tubes, we advised their extirpation before proceeding with a radical operation for cure of the strictured bowel. The

* Reported with specimen to the Medical Society of the District of Columbia, April 2, 1902.

† Reported with specimen to the Medical Society of the District of Columbia, April 16, 1902.

pus sacs were carefully enucleated, leaving the bowel, to which one tube was adherent, very much endangered by its removal. After some days a fecal fistula resulted, doubtless partly due to the contraction of the bowel just below this point, causing a greater strain from within the bowel on the thin wall already mentioned. The patient left the hospital, and to some extent regained her health. In many respects she appeared well, but was annoyed by the fistula, in addition to her extensive rectal stricture. In December, 1901, she returned again, with the object of having an attempt made at radical cure.

The anus showed the result of a former operation for fistula, or some severe injury, which had existed for many years. There had also been a sinus, which had discharged pus from the tube or ovary on the left side. This tract, with its mass of scar tissue, gave me great difficulty during the operation about to be described. The stricture extended from just above the sphincter ani muscle to a point above the posterior surface of the right broad ligament, and involved the entire length of the rectum. The excision of the bowel, including the fistulous portion, necessitated the removal of at least seven inches of the gut, and included that portion of the sigmoid which is usually found lying on the floor of Douglas' cul-de-sac. The operation was undertaken with the intention of removing both the fistula and strictured bowel. It is readily seen how much easier it would have been to remove the strictured bowel alone, either for malignant or non-malignant disease, in either sex. The abdominal route, or rather the combined method, was the only one worthy of consideration in the present instance; excessive mutilation by the Kraske method would have resulted from efforts to reach the pelvic brim, as was necessary in this case.

Anti-syphilitic treatment had been tried by competent physicians before the patient was sent to the hospital, and we made no further effort in that direction.

It was my wish to remove entirely the strictured portion of the bowel by what is known as Maunsell's method (*vide Lancet*, London, August 27, 1892), rather than by that of Kraske, or Murphy, who attacks the diseased bowel from the vaginal side. I shall pursue this method in appropriate cases in the future, especially in the early stage of carcinomatous stricture, or in any stricture less extensive than the one now under discussion.

Operation December 21, 1901. Outline of the operation on the bowel :

First. To tie two tapes around the sigmoid (the lower one just above the stricture), and to cut between.

Second. To free the proximal end by division of its mesentery, and withdraw it from the wound until wanted.

Third. To drag down the diseased portion of bowel through the anus.

Fourth. To draw down the proximal end of the sigmoid, and unite it to that portion of bowel immediately below the first stricture, which in this case was $1\frac{1}{2}$ inches above the margin of the anus.

The old cicatrix with the fistulous opening was removed as the abdominal wall was incised, the incision extending from 2 inches below the umbilicus to the pubis. It was necessary, as we proceeded, to repair the coils of intestine forming a part of the fistulous tract. Finally we found the opening in the rectum, just above the hard mass of cicatricial tissue, which was at least 2 inches above and behind the uterus. It required much time to separate old adhesions and get ready to take the first step toward the excision of the stricture. The peritoneum was divided as Weir describes (*Jour. Am. Med. Assn.*, September 28, 1901), who nearly follows Maunsell's operation. At the risk of appearing tedious, I will now attempt a minute description of the steps necessary to succeed in the operation. The peritoneum was divided and easily separated from the muscular coat of the bowel from below upwards, to a point on a level with the pelvic brim. We had to make more exposure on account of the presence of the old fistula, and fully 2 inches of sigmoid were sacrificed in this way. I was surprised to note how much less blood was lost during this separation of the peritoneum than was expected. Very few ligatures were required on the mesenteric vessels necessarily divided in order to permit sufficient elongation of the bowel to replace the excised portion.

In the account of operations performed by Maunsell and Weir I saw nothing which indicated any difficulty on their part in inverting and bringing down the lower end of the bowel after the division of the sigmoid. They operated for cancer which had its origin in the mucous or muscular coat of the rectum, while my operation was more difficult because the loose cellular tissue be-

hind the bowel was all gone and it was exceedingly difficult to separate the rectum from the fascia behind. However, to resume the description, after denuding the bowel of peritoneum a tape was tied around the gut just above the site of the fistula. After still further stripping the bowel of peritoneum, leaving $2\frac{1}{2}$ inches free, this portion was enveloped in a gauze sponge and turned upward out of the wound.

An assistant inserted long forceps through the widely dilated anus, into the rectum, where I, in turn, inverted and placed the cicatricial tissues to be extracted. So firmly united was the rectum to the adjoining tissues that it came away piecemeal, and I have no specimen to exhibit which gives the least idea of the extent of the disease. Finally the strictured portion was all removed, and the long tapes previously tied on the proximal extremity were drawn down with forceps, bringing the sigmoid into the position formerly occupied by the rectum. Catgut sutures were used to unite the peritoneum on the sigmoid to that over the rectum, and behind the uterus and broad ligament. Other sutures were placed around the bowel, with the intention of holding it firmly in place in its new position. The removal of six inches or more of bowel was accomplished in this manner without excessive traction upon the point of union. A glass drainage tube was placed in the lower end of the abdominal incision down to this point, and the wound closed in the usual manner. It was now necessary to unite the two ends of bowel through the dilated anus, which was accomplished without difficulty. A second drainage tube of rubber was now placed along the tract outside the bowel, reaching from the peritoneal junction above to the margin of the anus below.

We used catgut throughout this operation, except in closing the abdomen. In reviewing the steps of the operation, we were anxious regarding two important matters, one of which, hemorrhage, has been mentioned. Had our patient had cancer, we might have had more hemorrhage. The other danger was injury to nerves, or possibly other structures behind the peritoneum and the portion of the bowel removed. The amount of force used was great, and occasional use of scissors was necessary. But we are not aware of having injured any important vessel or nerve, as the results have been nearly perfect.

The operation occupied $2\frac{1}{2}$ hours from the time of making the incision.

Immediate transfusion of three pints normal salt solution was made before the patient was sent from the operating room. Her pulse, which was very weak indeed, was promptly restored, and gave us no anxiety afterward. The amount of pain was not excessive, and anodynes were not largely administered.

It was found that the ureters were not injured, nor was any other accident known to have happened during operation. The discharge from the glass tube placed in the abdominal incision was very slight until a fecal discharge began on the sixth day. I have not been able to satisfy myself about the origin of this discharge, but now favor the idea that it came from reopening of one or more loops of bowel which connected with the sinus. This discharge continued several days, but the fistula entirely closed before the patient left the hospital at the end of five weeks from date of admission.

At first the stools came involuntarily, then in about two weeks the patient began to have a warning and could tell the nurse in time to prevent soiling the pads or sheets. Finally, after three weeks, increased control of bowel movements showed that we might with good reason expect satisfactory results from the operation. It was most difficult to make an examination of her rectum while in bed, and we were not positively sure of good union between bowel surfaces until a final examination was made under ether, in January, when it was shown that fairly good union had resulted.

The last heard from the patient showed a still further improvement, and we learn that she is delighted with the result, having a permanent closure of her fecal fistula, and no serious trouble with her bowels, the first time for many years.

If a perfect result is ever reached in this case it will be necessary to make a careful repair of the sphincter ani muscle. At the present time some of its fibers are divided and in addition to this are buried in a mass of cicatricial tissues, the result of an operation for *fistula in ano*.

DISCUSSION.

Dr. D. G. Lewis asked Dr. Stone whether he used the method which he had described in operating upon the male. Dr. Stone answered in the affirmative.

Dr. A. F. A. King congratulated Dr. Stone on the skill which he had shown and the result of the operation.

Dr. Balloch said that anyone who had done surgical work about the rectum could understand the difficulties under which Dr. Stone labored, and could appreciate the result. High excision of the rectum was a difficult and bloody operation as ordinarily practiced.

At first he had thought Dr. Stone's operation similar to the one described by Dr. Edebohls in his paper before the Washington Obstetrical and Gynecological Society, but as Dr. Stone proceeded with the description of his operation he could see that it differed from Dr. Edebohls' in many ways.

Any substitute for the Kraske operation should be welcomed. It seemed unsurgical to chisel away the coccyx and sacrum in order to reach the rectum. The operation was severe and bloody, and the result not always satisfactory. Dr. Stone's operation was facilitated by the previous removal of the uterus and appendages.

The operation was a brilliant surgical triumph, and he congratulated the operator on the result which he had obtained.

Dr. E. F. King had seen the Kraske operation performed several times, but considered the method described by Dr. Stone much to be preferred. It was simple, less bloody, and there was less mutilation. He agreed with Dr. Balloch that the Kraske operation should be discarded.

Dr. Stone, in closing, said he feared that the description of his operation might give the erroneous impression that it was unnecessarily long and severe, which was not the case. The old fistula gave trouble. If this and the adhesions had been absent, the operation could have been completed in an hour or an hour and a half, and the prognosis would have been better.

CASE OF CANCER OF NECK OF UTERUS.*

By J. WESLEY BOVÉE, M. D.,

Washington, D. C.

Dr. Bovée removed the uterus from a patient sent to him for trachelorrhaphy and curettage, and which was discovered only when the operation was begun. The surfaces of the torn cervix presented no evidence of cancer, but when dilatation of the canal was begun the cervix broke down so easily that no doubt existed of the presence of the disease in a very advanced stage. He did a vaginal hysterectomy and believed the disease would continue. The patient was 33 years old, first menstruated at 15 years, and

* Reported with specimen to the Medical Society of the District of Columbia, April 2, 1902.

married a year later. Her third child was born in 1891, and she had one abortion in 1899. Her menstruation was regular, occurred every 28 days, was profuse and quite painful. Four months before operation she had pain in sacral and inguinal regions, with increased menstrual flow, having a bad odor, which continued to the time of operation. He exhibited the specimen to demonstrate the impossibility of early diagnosis in some cases of cancer of the cervix beginning in the glands of the canal.

DISCUSSION.

Dr. W. S. Bowen said that the case was interesting because it was unusual to find cancer of the cervix in women as young as 33 years. On this account also the malignant nature of the growth might easily be overlooked.

GENERAL TUBERCULOSIS; PROBABLY BEGINNING IN THE GENITALS.*

By J. FORD THOMPSON, M. D.,

Washington, D. C.

E. T., white girl, age 12, had had tubercular peritonitis with ascites during the winter of 1900, and again in March, 1901. Admitted to Children's Hospital, Washington, July 6, 1901, with advanced tuberculosis of right elbow joint. December 10, Dr. Thompson did a complete excision, after which she progressed nicely; temperature fell to normal and she was up and about. February 11, 1902, a small sinus leading into the joint was curetted and a small piece of necrosed bone removed. Under passive motion and massage, with the use of plaster casts, motion in the joint began to return. February 22, a large, cold abscess opened on the left side of back of neck. March 8, she had slight pain in abdomen, drowsiness, vomiting; temperature 102.4, pulse 140. She passed into a state of half stupor, and signs of peritonitis appeared. She became comatose, and died March 9; temperature 108.8.

Necropsy by Dr. Thomas Grasty: Extensive adhesive pleurisy both sides; lungs hyperaemic, but no tubercles. Heart soft and flabby; mitral endocarditis. Intestines everywhere adherent;

* Reported with specimens to the Medical Society of the District of Columbia, April 2, 1902.

much purulent liquid and some blood in abdomen, accompanied by strong fecal odor. Greater omentum, markedly thickened and adherent; cheesy tubercles everywhere. Liver firmly adherent and soft. Spleen infiltrated with tubercle. Intestine much congested throughout, and showed many ulcers, some of which penetrated to peritoneum. In lower ileum was an area about 7 inches long, deeply congested, and becoming gangrenous, and was tightly constricted by a portion of descending colon; above this area two ulcers had perforated. Mesenteric glands cheesy. Kidneys enlarged and softened. Uterus and tubes distended with cheesy matter. Ovaries cystic. Tubercle bacilli were readily demonstrated.

TWO CASES OF CEREBRAL HEMORRHAGE AND ONE
OF CEREBRAL MENINGITIS (*DIPLOCOCCUS*
LANCEOLATUS).*

By D. S. LAMB, A. M., M. D.,

Washington, D. C.

1. From white man, age 75, carpenter, weight about 200 pounds. Had had gastralgia, pneumonia, malarial fever, smallpox and erysipelas, and was a moderate drinker. March 3, 1902, after drinking, suddenly fell down and vomited several times; was sent to hospital; had a bruise over left eye, was restless, fell out of bed; breathing stertorous; stupor; urine 1020, pale, alkaline, no albumin or sugar; pulse 80-84, respiration 24. Next day was comatose; angle of mouth drawn to right; left arm and leg paralyzed, pupils normal, pulse 88-122, respiration 24-38. Died in the evening.

Necroscopy, by Dr. Lamb, showed some adhesions of dura to calvarium; brain firm; excess of serum in left lateral ventricle, which was somewhat dilated; large cavity to right of thalamus and caudate nucleus, extending to the base of temporal lobe, 1½ inches deep, and full of recent blood and clots; blood also in the ventricles; some atheroma of vessels at base of brain; heart large, well covered with fat, felt greasy; some sclerosis of coronary arteries; oedema and some bronchitic exudate in lungs; liver fatty; gall stones in gall bladder; spleen of normal size; old peritoneal adhesions; pancreas normal; stomach contained much

* Reported with specimens to the Medical Society of the District of Columbia, April 23, 1902.

mucus, showed venous congestion and punctated hemorrhages ; about two feet of small intestine showed peritoneal adhesions ; kidneys showed cortical cysts ; capsules readily removed ; urinary bladder distended with urine ; prostate somewhat enlarged.

2. From colored man, age 60, who was admitted to hospital March 28, 1902, and died same day. Was unconscious, breathing stertorous ; pupils unequally dilated, the left the larger ; right eye turned outward, the left inward ; neck turned to right ; rigidity of neck and limbs ; absence of sensation in left leg, but not of motion ; arterio-sclerosis ; urine 1022, acid, contained albumin, no sugar.

Necroscopy, by Dr. Lamb, showed a large cavity and blood clot in left side of cerebrum, involving basal ganglia and adjoining white matter ; blood in all the ventricles ; small hemorrhages also at occipital pole and in horizontal fissure of cerebellum ; blood-vessels atheromatous ; general old pericardial adhesions ; heart soft, fatty patches on mitral valve ; some thickening of aortic leaflets, large white clots in right cavities, extending into pulmonary arteries ; aorta dilated ; lungs quite oedematous ; punctated hemorrhages in stomach ; some old adhesions of ileum near ileocolic valve and of sigmoid colon which carried this gut to right side of abdomen ; also old adhesions of colon to liver ; passive congestion of liver ; spleen small ; kidneys showed atrophy of cortex and interstitial nephritis ; arteries of abdomen atheromatous.

These two cases are presented because of the differences in details.

3. Meningitis. From colored man, age 27, laborer, who had had mumps and whooping cough as a child, but otherwise had had good health. March 12, 1902, had headache and numbness of fingers ; right arm painful. The pain in arm increased daily ; 15th, had slight chill and was unable to move the arm ; 17th, admitted to hospital with pain in right side of thorax, slight chill, slight cough, dyspnoea, pain in breathing and coughing, breathing noisy and shallow ; 20th, delirium followed by coma ; urine normal ; 21st, died.

17th, temperature 101, pulse 120, respiration 32 ; 18th, temperature 101-102. 2, pulse 102-98, resp. 32-30 ; 19th, temp. 101.6-103.8, pulse 100-2, resp. 34-30 ; 20th, temp. 103-100, pulse 20, resp. 30.

Necroscopy, by Dr. Lamb, showed a body fairly nourished ;

the right arm appeared normal; brain convexity covered with lymph (in which was found the *diplococcus lanceolatus* by Dr. James Carroll, of the Army Medical Laboratory); some serum in ventricles; much serum in pericardium, large white clot in right cavities of heart, some dilatation of both sides of heart. Aorta was of small diameter. Old adhesions of lungs, which were otherwise normal. Liver and spleen cloudy; lymphoid follicles of spleen enlarged. Kidneys cloudy. Mesenteric glands somewhat enlarged.

DISCUSSION.

Dr. A. B. Richardson was asked to open the discussion. He said that he had not been able to make especial preparation or to consult recent literature upon the subjects of extravasation and meningitis. Cerebral hemorrhage was less often seen in insane asylums than chronic changes in the brain and its membranes, *e. g.*, pachymeningitis, etc. The case of leptomeningitis of the vault was interesting, and it was also exceptional because the convexity alone was affected, and the inflammation was primary and not secondary to an inflammatory process elsewhere in the body. Secondary meningitis frequently occurred in the course of the bacterial diseases, but here the inflammation was primary. It was also infectious, as was shown by the microscopical examination.

CASE OF RUPTURED TUBAL PREGNANCY.*

By J. W. BOVÉE, M. D.,

Washington, D. C.

The pregnancy was between $3\frac{1}{2}$ and 4 months; the foetus was found living and the placenta removed with it. The third night after operation a typical uterine decidua was expelled from the vagina. The patient was a much-emaciated tubercular subject, who had regularly menstruated, except that the last period had continued 6 weeks. This was the second live foetus he had removed in ectopic pregnancy, though he had operated at various periods of this condition up to 9 years. He had not felt justified in thoroughly removing the blood clots that were firmly attached to the viscera as the patient was extremely feeble and nearly pulseless at the wrist when the operation was begun. She made a good recovery.

*Reported with specimen to the Medical Society of the District of Columbia, May 14, 1902.

RUPTURE OF ADRENALS; UNILATERAL HYDRO-NEPHROSIS; PERITONITIS.*

By J. FORD THOMPSON, M. D.,

Washington, D. C.

H. F., white boy, age 11; no history of injury or disease of urino-genital organs, but when eight months old had an inguinal hernia, which was apparently cured by use of truss. Was taken sick March 17, 1902, on returning home from school, with abdominal pain and urgent desire to urinate, but could not urinate, although he had constant straining; went back to school, but was unable to remain because of the pain, and a swelling appeared in hypogastric region. The physician who saw him made many unsuccessful attempts to relieve the patient. On the 18th, admitted to Children's Hospital, Washington. Had not urinated for 24 hours; was semi-comatose; temperature 101.3, pulse 106 and weak, respiration 26, shallow and irregular; skin dry and hot, breath offensive, tongue much coated, sordes on teeth, pupils irregular; face, lips and nails cyanotic; bladder distended, external urethral meatus covered with blood. Gave chloroform and passed soft catheter, removing about one pint of thick, foul, bloody urine; hypodermoclysis; high salt enemas; hypodermics of nitroglycerine and strychnia; used hot packs, which caused profuse sweating; gave calomel without result. Urinalysis showed albumen, many free and unaltered blood cells, no casts, urea 15 grains to the ounce. During the night he did not pass urine; became comatose and had slight convulsions; had one stool from repeated enemas; abdomen became hard and tense, and symptoms of peritonitis appeared. Water was given as freely as he could take it; catheterized a second time, and 3 ounces of bloody urine removed.

19th, laparotomy done under cocain by Dr. Thompson; a small quantity of bloody serum found in abdomen; intestines much distended and replaced with much difficulty; complete examination of abdominal cavity impossible. Died in evening after slight convulsions; temperature 103-5.

Necropsy, by Dr. Thomas Grasty, showed miliary tubercles at

* Reported with specimens to the Medical Society of the District of Columbia, April 2, 1902.

apex of right lung ; the intestines much distended, and intestinal and mesenteric glands enlarged ; some bloody liquid in abdominal cavity. Spleen much enlarged and grayish. Large blood clots in region of suprarenal glands and involving the glands themselves. Right kidney much enlarged and ureter enlarged. Left kidney much atrophied and leathery, about one-third the normal size ; calyces dilated ; left ureter dilated. Bladder thickened ; large hemorrhagic discoloration of fundus, where was a large patch of papillary thickening. Ureteral and urethral openings of bladder normal.

CASE OF SPLENO-MEDULLARY LEUKAEMIA.*

By THOMAS A. CLAYTOR, M. D.,

Washington, D. C.

W. F., white man, age 61, born in England ; family history negative, except that one sister died of gastric cancer. He was a delicate infant and had marasmus. At 15 he went to sea ; remained two years ; then came to America, and in 1861 enlisted in the U. S. Navy, serving until 1863, when he was discharged on account of inguinal hernia. From the date of military service till now he has been subject to diarrhoea of varying severity. From 1863 to 1868 he served as watchman.

About 1868 he contracted a venereal sore, which disappeared with local treatment and was not followed by secondary lesions ; therefore, was probably a chancroid. He married in 1868, and has had three children. One died in infancy from hydrocephalus, the other two are living, but both have had symptoms of tuberculosis.

In 1880 he noticed that he was passing large quantities of urine ; was told he had granular nephritis. He went to Australia in 1884, and returned in 1888.

His present illness dates from September 1900, about 19 months ago, when, after an attack of (supposed) dysentery, he became very weak in the legs, was pale, and had shortness of breath, palpitation, oedema of lower extremities, etc. But even before

* Reported with patient to the Medical Society of the District of Columbia, May 14, 1902.

this he had been troubled with priapism, with the discharge of bloody semen. The splenic tumor was also noted at this time.

He became progressively worse until June, 1901, when he went to Asheville, N. C., where he had hemorrhages from the bowels. Returned to Brooklyn in October and had a tooth extracted, the hemorrhage from which was severe, lasting ten days.

He is now fairly well nourished, mildly anaemic-looking; tongue clean; visible pulsation of vessels of neck and of brachials; radial arteries markedly thickened; apex beat diffused, in the fourth interspace one inch outside the nipple line; heart apparently pushed upward by splenic tumor; faint systolic murmur heard at base of heart and transmitted to vessels of neck (haemic); slight impurity of first sound at apex.

Area of splenic dullness extends from eighth rib in midaxillary line downward and inward, reaching to within $1\frac{1}{2}$ inches of the pubes and as far as the umbilicus. Liver dullness extends $2\frac{1}{2}$ inches below costal border.

The eyes showed hemorrhagic exudate below the macula lutea; blood (April 29): reds, 2,319,000; hg., 47.5 per cent.; whites, 321,000; macrocytes, none; microcytes present; a few polychromatophilic cells; a few poikilocytes; microblasts, none; normoblasts in large number (27,000 per cubic millimeter, 1 to every 90 non-nucleated red cells); many normoblasts contained double nuclei or bilobed or trilobed nuclei. Leucocytes: Small mononuclear, 7 per cent.; large mononuclear and transitional, 4 per cent.; polynuclear, 33 per cent.; eosinophiles, 5 per cent.; myelocytes, 51 per cent.; no polynuclear, showing basophilic granules could be found. Urine: Quantity in 24 hours, 870 c. c.; amber color, acid; sp. gr., 1016.374; no albumen nor sugar; urea, 2.35 per cent. or 20.45 grms. in 24 hours; uric acid, .0915 per cent. or .716 grms. in 24 hours; phosphoric acid (P_2O_5), .065 per cent. or .566 grms. in 24 hours. Ratio of uric acid to urea, 1 to 26, of uric acid to P_2O_5 , 1 to 7; chlorides (nacl) .74 per cent. or 6.438 grms. in 24 hours; total solids, 4.214 per cent. or 36.66 grms. in 24 hours.

I wish to express my thanks to Dr. J. D. Morgan for his courtesy in allowing me to present this case to the Society, and to Dr. Nichols for his careful and painstaking work in the differential count of the various blood cells and for his very elaborate analysis of the urine.

SUPRA-PUBIC LITHOTOMY.*

By BENJ. G. POOL, M. D.,

Washington, D. C.

The patient whose case I present is white, an American, age 72, of temperate habits and has been remarkably strong and healthy. In his best days he thought little of walking twenty miles in an afternoon; digestion good, though teeth were bad; a great water drinker, taking large quantities in his many rambles between the Blue Ridge and tide water.

About 1887 he began to be troubled occasionally with vesical irritation. He first consulted me professionally in November, 1894. I gave him a prescription, and insisted on the need of an examination. I saw him next, December 24, examined him, and found a stone and much enlargement in the region of the prostate. He declined any operation. During 1895 I saw him eight or ten times. In April, 1896, he had rigors, fever, convulsions, became comatose and for three days we expected every hour to be his last; but in two weeks he was about again, and during the summer he went to the country. With the almost constant use of a catheter and plenty of deodorized tincture of opium, he went along until the following October. He was weak, haggard and emaciated; was using the catheter almost continuously night and day; had fallen several times and cut and bruised himself in many places, and his skin was covered with large, brown, scaly patches. October 4, 1896, Dr. Roman giving the chloroform, I cut down on the bladder by the supra-pubic route, and removed twelve stones. The last was pretty solidly imbedded in the base of the bladder.

The bladder was stitched to the abdominal wall and a glass drainage tube introduced. The symptoms were almost immediately relieved. He began to sleep for hours at a time, and his appetite resembled that of a person recovering from severe typhoid fever. He increased rapidly in weight, the ugly patches disappeared, and the skin became white, soft and resilient.

In April, 1897, nearly 7 months after the operation, he had symptoms of renal calculus, lasting several hours. The next day

* Read and specimen presented to the Medical Society of the District of Columbia, May 14, 1902.

he found the opening in his bladder stopped by a calculus, which, however, by getting on his hands and knees and straining, he succeeded in passing. This stone weighed 22 grains.

The next two years were passed in comparative comfort, though a chapter might be filled with a description of the appliances which he contrived to regulate the discharge of urine.

In May, 1899, the vesical irritation had increased, and the bladder was incrustated with calcareous matter. The opening was enlarged, and with a dull curette the bladder was cleaned out.

The notes of the case for the next three years would add little of interest, except the fact that he has apparently grown younger. He is now in unusually good health for a man of his years, weighs about 170 pounds, and continues to wear a glass tube $2\frac{3}{4}$ inches long and the size of a 23 sound (American scale) in the opening into the bladder; he stops this tube with an ordinary cork stopper. Occasionally he washes out the bladder, but is not fond of that operation, and frequently allows several months at a time to elapse without doing so. Sometimes he urinates through the urethra, especially after having taken twenty or thirty drops of deodorized tincture of opium, but this is generally painful, and he prefers the supra-pubic opening.

He has no difficulty in passing an ordinary elastic catheter through the urethra and injecting the bladder, and on removing the drainage tube he can eject the water through the artificial opening with considerable force.

The combined weight of the calculi was 24 drachms, giving an average of 2 drachms to each; the largest weighed $3\frac{1}{2}$ drachms, the smallest 70 grains.

They seem to be composed of organic matter, the oxalate, carbonate and phosphate, or perhaps the bibasic phosphate of lime and the triple phosphates, and are worthy of more than passing notice. The nucleus, or primary formation, consists of the oxalate, carbonate and phosphate of lime, constructed on an animal matrix. They are probably of renal origin, though this calculus is extremely rare, in England at least, as Dickinson was able to find but one presenting this triple combination in the pathological museums of London, in March, 1871. According to Coulson: "Whereas calculi composed of uric acid are common in England, France and Germany, in Russia the oxalate of lime and phosphatic calculi are more frequently met with. Of

these, oxalates are found in children and young people, while phosphatic and uric acid calculi are more common in adults."

In western India, where the calculous disease is frequent, the oxalate of lime occurs in about one-third of the nuclei. (Van Dyke Carter: "Calculous Diseases in Bombay," St. George Hospital Reports, 1871-2, p. 83.)

As to the proportion in the United States, I am unable to say. It has been stated that the oxalate of lime calculus is more common in the United States than on the continent.

I found two calculi at the Army Medical Museum which, in external appearance, resembled mine—one presented by Dr. Eve, of Nashville, and one by Dr. J. Ford Thompson, of this city—both removed from children.

In acid urine we would expect to find uric acid or lime oxalate, or both together; in urine which is alkaline from a fixed alkali, the neutral phosphate or the carbonate of lime, both of which are rare.

"From urine which is neutral, or barely acid, the crystalline or acid phosphate [$(2 \text{ Ca O, H O, P O}_5 + 3 \text{ aq})$ (Dicalcic)] is deposited. Decidedly alkaline urine deposits the neutral or amorphous phosphate (3 Ca O, P O_5). So long as the urine remains free from ammonia the lime-salt will be thrown down without any ammoniacal admixture, and a stone, should one form, will consist of phosphate of lime, unmixed with the triple phosphates—a rare variety of calculus." (Dickinson, p. 144.)

"Calculi of pure phosphate of lime are rare. They were first described by Dr. Wollaston in the *Philosophical Transactions*, 1797. There are two varieties, the one evidently of renal, the other of vesical, origin." (Coulson, p. 211.) The general ratio is 1 to 117. "Calculi of neutral phosphate of lime are usually pale brown, with a smooth, polished surface, regularly laminated, and the laminae so slightly adherent as to be easily separable into concentric crusts. They contain a considerable proportion of animal matter." (Coulson, p. 211.)

The clinical significance of an excess of these salts in the urine is difficult to determine.

There are many writers on the causation of stone and almost as many theories as writers. One author controverts the pet theory of another and constructs a plausible explanation of his own, which falls before a succeeding critic. The secondary formation

is generally conceded to be somewhat simpler. The primary part of the calculus sets up irritation. Carbonate of ammonia renders the urine alkaline, the phosphates are deposited, and if any magnesia be present in the urine, which it nearly always is, we have the appearance of the triple phosphates.

The circumstances which influence the result of a lithotomy are numerous and diverse. Some are unknown, some only become apparent when the result is known, some are objects of an honest difference of opinion, and still others, if grouped in tables of respectable magnitude, show a remarkable coincidence. There are, however, several very important matters to consider before we advise an operation. 1, the skill of the operator; 2, the condition of the patient as to age, sex and health; 3, the size of the stones (which is of more importance than the weight), the number, kind and situation of the stones. The possible sequelae and tendency to relapse should also be considered.

The most frequent cause of death after lithotomy is infiltration of urine into the cellular tissue of the pelvis. Boyer considered hemorrhage as one of the most frequent accidents of lithotomy, and Begin calculated that 1 out of every 4 deaths, after the lateral operation, was caused by hemorrhage. The introduction of chloroform has done much to lessen the number of cases dying from shock. Suppuration, abscess, cystitis, peritonitis, purulent infection, renal disease, erysipelas and tetanus are among the causes of death following operation. "It is probable that more patients die after lateral lithotomy in consequence of the violence done to the bladder and perineal tissues in attempts to seize and extract calculi than from any or all other causes. (Dulles, *Amer. Jour. Med. Sci.*, July, 1875, p. 61.)

A table of 1,535 cases of the lateral operation by different operators, given by Gross in 1866, showed 125 deaths, or a ratio of 1 in 12. Another table (Gross, *Surgery*, II, 1866, p. 737) showed the results of 3,770 operations in various hospitals, and that 1 patient died for every $6\frac{1}{2}$ operations.

Frequency of Calculus at Different Periods of Life.—The table from Coulson shows that 71 per cent. of those submitted to lithotomy are under 21 years of age. Persons are twice as liable to stone from 40 to 60 as those from 20 to 40, while beyond 60 they are four times as liable.

A study of the ages of patients operated on for stone indicates

that the best results are obtained in those under 40 years and in children, while beyond 40 the mortality is greatly increased, being about 1 in $13\frac{1}{2}$ under 40 and 1 in 4 of those beyond that age.

With stones under 2 drachms in weight the mortality is greater than with those between 2 and 3 drachms, and particularly those between 4 and 5 drachms. The chances of recovery with this last weight are about $2\frac{1}{2}$ times greater than with a weight less than one drachm.

The size of the stone very materially affects the result of the operation, the size more than the weight, but the tables are generally compiled as to weight. With a stone one ounce in weight the chances are nearly twice as great as with a stone between one and two ounces, and nearly six times as great as when the stone weighs two to three ounces. The mortality with stones of any weight over an ounce is nearly 1 in $3\frac{3}{4}$, and with those over two ounces it is something like 1 in 2. A certain moderate size of stone, however, would rather seem to be advantageous than otherwise; the most favorable results are not associated with the smallest stones, as shown by Crosse. The number of stones plays a very important role in determining the probable result of an operation, but here, unfortunately, we are unable to obtain any very reliable data. In 452 cases the average number of stones was 3; 320 persons recovered after having an average of 1.8 stones removed; 132 persons died after having an average of 5.6 stones removed. Those who died had a little over three times as many calculi removed as those who recovered. Cases requiring operation are about twenty in males to one female. The results are more than twice as fatal in males as in females be either method.

Supra-pubic Lithotomy.—Prof. Gibson, of Philadelphia, was the first to perform the supra-pubic operation in this country, namely, in 1824, his patient dying in a few days of peritonitis from urinary effusion.

The operation was repeated, however, not long after, by Dr. Carpenter in 1827, and his patient recovered; and Dr. McClellan had 3 recoveries and 1 death.

John Croft successfully operated on a feeble old man of 72 (about 1887), being the first supra-pubic operation in 125 years in St. Thomas Hospital since being abandoned by Cheselden.

In *Gross' System of Surgery* (1886) is a table of 180 cases of

supra-pubic operation, with 39 deaths, or one in four and eight-thirteenths, while the deaths from 5,708 operations, by other methods, resulted in 637, or only a little over one in nine; or, in other words, the death rate from the supra-pubic method was about double that by the other operations, and he, as well as most of the authorities up to a quite recent date, give the supra-pubic operation a secondary place or hardly refer to it at all.

Why this prejudice against this operation? Let us look a little closer into the statistics which are cited to the disadvantage of the supra-pubic route and see if we can explain some of the apparent results. In the first place, consider the small number of operations by a comparatively new method by operators lacking the skill and experience possessed by those operating by the perineal route. We can see by other tables, given by the same author, that the result of the lateral method reached as high a mortality as 1 in $6\frac{1}{2}$ in 3,770 cases collected from various hospitals; in fact being higher in some of them than the figures give by Gross for the high operation.

In 1875 an abstract of the thesis of Dulles was published (*Amer. Jour. Med. Sci.*, July, 1875), founded on an analysis of 478 cases of supra-pubic lithotomy, in which he gives a number of reasons for the apparent high mortality of the operation. Among others, I will mention the special methods of certain operators; for instance, in a number of cases the bladder of the patient was ruptured in attempting to distend it; in other cases the peritoneum was cut and the intestines protruded. Some surgeons placed ligatures on the penis to cause distension; with what results we may imagine. In many, if not most, of the recorded cases a perineal section was made at the same time, and the result charged to the high method.

Some surgeons placed rudely constructed catheters in sensitive urethrae and left them until the tormented patients were provoked to violence which caused their death. The supra-pubic operations were reserved as a last resort in cases amenable to no other treatment. Yet, notwithstanding all this, calculi weighing from one to two pounds were successfully removed, and the patients recovered after failure to extract by the perineal route. We find that the average age of those subjected to the supra-pubic operation is about a third greater than that of those submitted to perineal lithotomy (28 to 39 years). Again, we find that the

weight of the calculi was nearly three times as great in those who died and over five times as great in those who recovered. As soon as the weight of two ounces is passed, the results are decidedly in favor of the supra-pubic operation. It is surprising that the tabular statements are apparently on the side of the older operation?

The advantages of supra-pubic cystotomy are :

1. The ease and safety, under modern antiseptic procedures, with which it can be performed.
2. It is free from hemorrhage and the operator has full and easy view of the field of operation.
3. It does not expose the patient to injury of the rectum and the ejaculatory ducts.
4. The operation is adapted to any disease or condition for which a lithotomy should be done, admitting of the removal of large, attached, or encysted calculi which it might be impossible to seize or extract through a perineal section.
5. If a fistula remains, or it is found advisable to maintain drainage, the condition of the patient is much more satisfactory than with a perineal fistula, as with a properly adjusted urinal he can pursue his occupation with slight inconvenience.

CASE OF CONSTRICTED APPENDIX.*

By J. W. BOVÉE, M. D.,

Washington, D. C.

The vermiform appendix had a marked constriction about $1\frac{1}{2}$ inch from its free end, the intervening portion being distended by a hard fecal concretion ; here the transverse diameter, including the walls of the appendix, was fully 1 inch. The appendix appeared otherwise macroscopically normal. It was removed in the course of an operation for other trouble, and no symptoms referable to it had been given. It was shown as an illustration of a condition which often preceded severe types of appendicitis.

* Reported with specimen to the Medical Society of the District of Columbia, May 14, 1902.

CASE OF PRIMARY SARCOMA OF OMENTUM.*

By J. PRESTON MILLER, M. D.,

Washington, D. C.

A growth, destructive of life, in a part of the human body not frequented by primary disease is of more than passing interest, but when the neoplasm eludes all search of diagnosticians, both medical and surgical, during the life of its victim, and after death likewise comes off victorious in its deception while held up in the fullest light by the pathologist, it ought to be worthy the attention of the Society.

It is a primary sarcoma of the omentum. I desire to invite your attention to the extreme rarity of this disease, its obscurity in our medical literature, being seldom mentioned by writers on medicine or surgery, and, when alluded to at all, is usually with such lack of precision in location and character as to leave one in a maze of doubt and inquiry. The omentum being a reduplication of the peritoneum, we find the malady recorded under the name of the latter membrane in the majority of cases, the omentum being almost never mentioned.

Our gynecic friends are sometimes our most accomplished abdominal surgeons, doing anything from the xiphoid to the pubes, but they are not the purveyors of information on malignant disease of the omentum or even the peritoneum. It is not mentioned by any one of the many excellent works of this great specialty in my library.

The works on general medicine with which I am familiar are mostly either silent or meager on this subject. Flint¹, Bartholow², Whittaker³ and Allen⁴ are silent on both sarcoma and carcinoma of this region. Pepper⁵, Tyson⁶, Thomson⁷ and Eichhorst⁸ are silent as to sarcoma, mentioning only carcinoma. Pepper is noncommittal as to its primary existence in the peritoneum. Tyson says: "Primary cancer of the peritoneum is an event of extreme rarity. Its occurrence as a true epithelial cancer must, however, be admitted." Eichhorst: "As a rule carcinoma of the peritoneum is secondary," but admits "rarely it is primary."

Musser⁹ mentions sarcoma only as a retroperitoneal disease,

*Reported with specimen to the Medical Society of the District of Columbia, May 14, 1902.

and of carcinoma he says, "occasionally it is primary." Osler⁸: "Primary malignant disease of the peritoneum is extremely rare. It is probable that so-called primary disease of the serous membranes are endotheliomata and not carcinomata." Allbutt¹¹ finds sarcoma when present in the peritoneum due, as a rule, to its primary existence in testicle or ovary, and learnedly says: "It is probable that most of the cases formerly recorded as 'peritoneal cancer' were really examples of sarcoma. The most usual situation is the retroperitoneal connective tissue; less commonly they involve the omentum. An extremely interesting feature presented by some of them is that of a mixed growth, in which the histological features of sarcoma and carcinoma are associated. The existence of primary cancer of the peritoneum is much in dispute. Histologically there can be no doubt that primary tumors connected with the peritoneum do occur. By those who deny that serous tissue can give rise to epithelial growths, such neoplasms are named 'Alveolar sarcoma.'"

So much for medical references. My surgical citations are few. Wyeth¹², and also the *International Text-Book of Surgery*, the latter two replete volumes, published in 1900, are silent on sarcoma and carcinoma of the peritoneum or omentum. Gross¹³ defines sarcoma thus: "They hold an intermediate position between benign and malignant growths, inasmuch as they have a local, innocent period during which they are amenable to the knife, but may later assume a malignant form." Gross does not mention sarcoma or carcinoma of either omentum or peritoneum.

Craig Smith¹⁴: "Of the various malignant diseases which may attack the omentum, colloid cancer is the most important." In his second volume Smith says: "Tumors of the omentum are rare, and in my experience they are usually secondary to some malignant disease elsewhere in the abdomen." The *American Text-Book of Surgery* says: "Primary carcinoma of the omentum does not occur. A primary, malignant tumor which springs from the omentum is always sarcoma." Maurice H. Richardson, in *Park's Surgery*, tells us "carcinoma is never primary in the omentum. Sarcoma has been observed as a primary omental growth."

My clinical report begins March 10, 1902, when I was first called to see Mrs. T., aet. 55, a native of Loudon County, Virginia, where she lived until she came to this city in the autumn of 1901. On the maternal side two aunts died from cancer of the breast, at

the ages of 50 and 65 years. She has three sisters living; one died, age 38, with the interesting history that she had an abdominal tumor, and under the treatment of Dr. J. Taber Johnson stipulated that, if, when he opened the abdomen, he believed the removal of the tumor would endanger her life, he would close the wound without removing the neoplasm. The doctor opened the abdominal cavity at his private sanitorium in this city, but she returned to Virginia with her tumor intact, and went about nearly two years before she succumbed.

Mrs. T. has light hair, steel-gray eyes, general appearance not of frail type, is of more than medium height, neither stout nor slender, not emaciated, abdomen rather full, but less so than is usually seen in women of her age and general build. She survived the usual diseases of childhood without sequelae; no history of tuberculosis; had typhoid at 15. She is the mother of seven children, all, except one, living and of splendid physique and health. For more than twenty years she has been dyspeptic, with occasional acute attacks, confining her to bed from three days to as many weeks. In that respect she had not been worse this than previous winters, though she sought warmth at the register more than she had done other winters. She had more chilliness and took cold more readily, though she went about as usual.

I found her with pronounced nausea. Palpation revealed no tenderness of abdomen. There was no acute pain, but she complained of "agony" in the epigastrium, extending over the umbilical and right and left lumbar spaces. Respiration 20, temperature 100, pulse 120. She also had a "cold in the head."

The nausea diminished after slight catharsis from minute doses of calomel, ipecac and soda, but the gastric agony remained.

There was no edema of ankles or feet. Quantity of urine usually $2\frac{1}{2}$ pints in 24 hours; 1020, acid, normal as to odor, color and indican, negative as to albumin and sugar. Food was never desired and poorly borne, in spite of treatment. She would not stand, or even sit up, except at my request, and then only by short intervals, with manifest increase of suffering. Having tried lavage without satisfactory success, Dr. Wm. Gerry Morgan saw her in consultation March 18. We diagnosed indigestion, with excessive nervousness.

March 29, fluctuation was noticed in the abdomen; 30, edema in right ankle. Acetate of potash, squill and digitalis made no

decided impression on the dropsy, but it increased the flow of urine. Morphine had to be given hypodermatically, with increasing frequency, and strychnine under the skin.

April 5, Dr. James Kerr saw the patient with us, and said that "he was inclined to believe there was malignant disease of the peritoneum." He withdrew fluid from the abdominal cavity through a hypodermic needle; Dr. Morgan had it analyzed, and found it to be ordinary peritoneal fluid. The fluctuation was not like that of ascites, nor did the fluid distend the lower abdomen when the patient sat or stood erect. The wall of the abdomen formed perpendicular folds, which hung over the lower part of the body. A horizontal band appeared to constrict the cavity directly below the umbilicus, and prevent the fluid from going below, thus strongly suggesting a cyst.

April 11, Dr. Kerr withdrew nearly two gallons of ascitic fluid. April 13, he again examined her and found nothing confirmatory of his belief as to malignant neoplasm in the peritoneum, but was led to believe there was cirrhosis of the liver.

April 24, I withdrew a gallon of ascitic fluid, which gave her a respite for a few days, but she died May 2.

For nearly eight weeks I saw her never less than twice, oftener three times, a day. Sharp pains were perhaps never present unless from manipulation or change of position. She sometimes described her agony as "a throbbing and aching there," pointing to the umbilical region. The nodular masses, described so graphically in the books as being hard and easily felt, were never perceptible, in this case, through the abdominal wall. In the post mortem handling these growths felt softer to me than the abdominal wall. They were of almost a strawberry color, some of them not unlike that berry in shape and of rough villous outer appearance, but to the touch they were very soft, and the pedicles were so frail that many fell off by their own weight and rolled down over the table on the floor. The liver, not much at variance from the normal in size, was abnormally white and macroscopically indicated slight cirrhosis, but this proved microscopically to be more fatty than cirrhotic. The gall-bladder was distended with a handful of calculi, but the cyst did not protrude below the lower border of the liver nor come down flush with its inferior edge. It appeared bound as if by inflammatory process higher up and posteriorly, so that detection must have been difficult, if not impossible. Dr.

Morgan counted thirty-one of these calculi, mostly of the size of small hazelnuts. These are of special interest to me because, a few years ago Dr. Halsted, of Johns Hopkins University, when operating on a patient of mine for biliary calculi, told me he had made notes of a series of cases with that disease and found a history of typhoid in nearly all of them. He even found typhoid bacilli within the stone. The patient then being operated on had had typhoid four years previously. The patient now reported had typhoid in 1861, when 15 years old. Did she carry these calculi in the hepatic cyst 41 years?

Dr. D. S. Lamb, who made the autopsy, reported that there was some emaciation, some emphysema, hypostatic congestion and oedema of lungs; heart small, liver fatty, gall-bladder full of facetted calculi; peritoneum, both visceral and parietal, showed many soft, reddish nodules, rather pediculated; along the transverse colon and in the greater omentum these were massed together. Spleen, pancreas, stomach, intestines and kidneys normal; small cysts and atrophy of ovaries; abdomen contained much turbid liquid.

HISTOLOGY.

Dr. James Carroll, of the Army Medical Laboratory, made a microscopic examination of a portion of the liver and a small nodular mass detached from the omentum, and reported:

"The section from the liver shows a quite extensive fatty infiltration, with cloudy swelling and slight granular and fatty degeneration. The capillaries are markedly engorged, and there are slight evidences of a beginning increase of connective tissue, suggesting, in places, an early stage of hypertrophic cirrhosis.

"The tumor section, under the low power, bears considerable resemblance to an adeno-carcinoma, from the presence of tubular spaces with columns and masses of cells with varying arrangement. It contains everywhere numerous thin-walled bloodvessels that are distended with blood. The very delicate stroma in and about the walls of these vessels appears to be the only supporting connective tissue stroma the growth contains. The cells of the new growth vary in size and type from the low cuboidal cell, with small vesicular nucleus, to the large giant cell, including a comparatively high columnar type frequently seen in the margins of the lymph spaces. The nuclei especially exhibit marked evidences of proliferative activity, manifested by the presence of numerous large, intensely stained, lobulated or mulberry-like

masses of chromatin, surrounded by a relatively small amount of protoplasm. The endothelial spaces, many of which are plainly shown, are bounded by walls of moderately high columnar or cuboidal cells, seldom or never in a single layer, but superimposed upon aggregations of cells of a lower type, the marginal layer of columnar cells appearing to have been raised from their basement stroma by the active proliferation taking place beneath them. In one part of the section this activity is shown by the presence of an almost continuous double row of large cells containing enormous mulberry-like nuclei. Between these rows of cells are a few bloodvessels extending nearly to the end of the projection where the endothelial cells unite to form a pointed process. The explanation is as follows: By mutual pressure in the rapidity of their growth the endothelial cells have been raised from their basement stroma, carrying with them the bloodvessels and connective tissue, the whole forming a papilliform process.

"The described nuclear changes and the marked variation in size and type of the cell are seldom or never seen in epithelial new growth. This growth, being primarily and solely confined to the omentum, is necessarily of endothelial origin, and the vascular endothelium being unaffected, the diagnosis must be endothelial sarcoma, or perhaps more properly, endothelial lymph-angio-sarcoma."

Dr. Miller, in conclusion, said: There would be no further discussion of my paper except for the pertinence of a letter from Dr. Halsted which answers the interesting question put in the last sentence of my report as to the biliary lithiasis of forty-one years' duration.

DISCUSSION.

Dr. Miller, in further explanation of his specimen, read the letter from Dr. Halsted, which answered the question whether his patient could have carried a handful of calculi in the gall-bladder for 40 years. Dr. Halsted affirmed that, in his opinion, this was possible. There had long been a theory that an etiological relation existed between gall stones and sarcoma of the omentum, but, while his case seemed to substantiate this, he was not inclined to give much weight to the theory, because biliary calculi were so common and malignant disease of the omentum was so rare. A review of the literature showed that a few cases of cure of the latter had been recorded. Experimental transplantation of streptococci on the omentum would settle the question as to the value of this method of treatment.

Dr. D. S. Lamb said that Rokitsansky, of Vienna, in 100,000

autopsies, noted the frequent association of gall stones and malignant disease, particularly of the stomach. As yet there was no explanation of the coincidence.

Dr. Carroll, who made the microscopical examination, stated the results. [See above.]

Dr. Miller: The triple pathological condition found in this liver, viz : cirrhosis, fatty degeneration and gall stones, and the relation of cause or effect of any one of these conditions to the other, or any or all of them to the neoplasm of the omentum, is a matter for fine scientific inquiry. It is to be remembered that the pancreas, spleen, heart, uterus, kidneys, stomach and intestines were free from any disease whatsoever.

A few years ago the doctrine of relationship between biliary and lithiasis and malignant disease of the peritoneum was somewhat promulgated and almost became fashionable. This case would appear to lend itself to the support of that doctrine. With me, however, that belief could not obtain, for the all-sufficient reason that malignant disease of the peritoneum is of extreme rarity, while biliary calculi are frequent. In an experience of twenty-eight years, this was the first primary sarcoma of the omentum I have been called to treat in private practice, and in all my life I have seen nothing resembling it, except once ; that was in a private patient of Segond in Paris, more than four years ago, a woman, age 50 years. He debated only between tuberculosis and malignant disease of the peritoneum. The patient was extremely emaciated.

A nodular, rough and hardened surface was perceptible under the attenuated abdominal wall, through which Segond made an exploratory incision, exposing a mottled peritoneum, varying in shade from purple to vivid red, irregular and circular dots, and multiform excrescences, some of which resembled strawberries in shape and color. So striking is the picture that when one has seen it he will not readily forget it.

When Segond passed his fingers over the exposed neoplasm, his eyes flashed knowingly, as he said, "Car-ce-nome." He sewed up his incision. I asked him what further he would do, to which he answered, "Nothing ; nothing more to do except to make her comfortable as possible until she dies."

I have found a few cases reported as cured by removal with the knife, but I could not ascertain the period of time intervening between operation and report of cure. I agree that if a diagnosis of sarcoma of the omentum could be made sufficiently early, its successful removal might not be impossible.

I suspect no surgeon would at this time have the temerity to implant streptococci in these tumors of the peritoneum, as is sometimes done when sarcoma is inoperable in more superficial, and less vital, parts of the body ; notably by Wyeth, of New York city.

Should some novice in abdominal surgery open a sarcomatous peritoneum and accidentally develop a suppurative peritonitis, it is possible, and even probable, that his knife would blaze the path through a fronded wold yet primeval and dark to the most sagacious pathfinder among our confrères of the scalpel.

Dr. Halstead's letter :

"I remember the details of Mrs. S.'s case very well and often think of her. We have obtained a history of typhoid fever in not more than about one-third of our cases, unless I am mistaken, but I remember at one time we had quite a long series of almost consecutive cases which gave a history of typhoid. I will go over our histories and try to tell you the exact proportion of cases in which there has been a typhoid history. I am very much interested to hear what you say about your case of gall stones. I believe that it is quite possible for stones to be present so many years without giving symptoms. Last year I operated upon a woman who, 25 years before, had had a definite attack of biliary colic, but until the operation 25 years later had not had any symptoms which her physician, Dr. Ellis, of Elkton, could refer to gall stones. Dr. Ellis, as you know, is a physician of very high standing, and two years ago was president of the College of Physicians and Surgeons of Maryland. The pathologists, as you of course know, often find a bladder full of stones which, so far as was known, had never given any symptoms. If they can exist 25 years in a gall bladder, why not 41 years or longer? But the typhoid bacilli are evidently not the only micro-organisms which cause biliary calculi. The colon bacillus, for example, is a common etiological factor in the production of gall stones, and it is believed that almost any micro-organism may be responsible for their formation."

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4. *The Practitioner's Manual*, C. W. Allan.
5. *System of Medicine*, Wm. Pepper.
6. *Practice of Medicine*, James Tyson.
7. *Text-Book of Practical Medicine*, Wm. Gilman Thomson.
8. *A Text-Book of the Practice of Medicine*, Hermann Eichhorst.
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10. *Practice of Medicine*, William Osler.
11. *Allbutt's System of Medicine.*
12. *A Text-Book of Surgery*, John S. Wyeth.
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15. *A Treatise on Surgery*, Roswell Park.

REPORT OF THE EXECUTIVE COMMITTEE ON THE PROPOSED CONSOLIDATION OF THE MEDICAL WORK OF THE DISTRICT GOVERNMENT.*

Acting upon the suggestion contained in the recent presidential address of Dr. D. S. Lamb, the late President of this Society, your Executive Committee has carefully considered the advisability of action by the Medical Society looking toward the consolidation of all the medical work of the District Government under one official head. Relative to this matter, the Executive Committee respectfully submits the following report :

The work of a purely medical character, or more or less related to medicine, now done officially under the government of the District of Columbia is as follows :

1. The administration of the affairs of the Health Department.

The affairs of the Health Department are now by law under the supervision of a physician, who is responsible directly to the Commissioners. His duties are, under direction of the Commissioners, to execute and enforce all laws and regulations relating to the public health and vital statistics, and to perform all such duties as may be assigned to him by the Commissioners.

2. The administration of the medical affairs of the Washington Asylum and of the Workhouse.

This is under the supervision of a physician, designated by law as the visiting physician, Washington Asylum, and immediately responsible to the Intendant of the Asylum. He is charged with the care of the sick inmates of the Washington Asylum and of the Workhouse. Under his direction are three resident physicians, one pharmacist and twenty nurses.

3. The examination of applicants for appointment in the police and fire departments, the treatment of the sick and injured employés of such departments, and the treatment of sick prisoners in police station houses.

This work is entrusted to four physicians, designated as surgeons of the police and fire departments, who are responsible directly to the Major and Superintendent of Metropolitan Police and to the Chief Engineer of the Fire Department.

4. The treatment of the sick poor at their homes.

This work is done by twenty-two physicians, designated phy-

* Reported to and recommended by the Medical Society, April 2, 1902.

sicians to the poor. These physicians are responsible directly to the Board of Charities.

5. The determination of the physical condition of applicants for admission to hospitals for treatment at public expense, and the transfer of patients from their homes to those institutions.

This work is under the supervision of the Board of Charities. The admission of the sick poor to hospitals is under the immediate supervision of a clerk in the office of the secretary of this board, which clerkship happens to be filled at the present time by a physician. His action in any particular case is supposed to be based upon a certificate issued by a physician or on a personal examination of the patient.

The ambulance service is under the immediate direction of this same clerk.

6. The examination of applicants for licenses to practice medicine.

The examination of applicants for licenses to practice medicine is entrusted to three examining boards, composed wholly of physicians. These boards are under the general supervision of the Board of Medical Supervisors, composed of three physicians and two laymen. All these boards are responsible directly to the Commissioners. Licentiates of the Board of Medical Supervisors are required by law to register at the Health Office.

7. The examination of applicants for registration as pharmacists.

The registration of pharmacists is entrusted to a board made up of officers, three pharmacists and two physicians, designated as Commissioners of Pharmacy, and responsible directly to the Commissioners of the District. Pharmacists are not required to register at the Health Office.

8. The examination of applicants for licenses to practice dentistry.

The determination of the qualifications of applicants for licenses to practice dentistry is entrusted to a board of five dentists, known as the Board of Dental Examiners. This board is responsible directly to the Commissioners. Persons found qualified to practice are certified to the Health Officer for registration.

9. The examination of persons alleged to be insane, with a view to their commitment to the insane asylum.

The examination of persons alleged to be insane is made as follows: If the patient is at home, and is destitute, the examination

is made by a physician to the poor ; if not poor, by the usual family attendant, except as specified below. If the patient is confined to a police station house, the examination is made by a police surgeon. If an inmate of the Washington Asylum or of the workhouse, the examination is made by the attending physician of the Washington Asylum. After legal proceedings have been begun the patients are examined by physicians appointed by the court. In every case these physicians are directly responsible to their immediate superiors, indicated above, except that physicians appointed by the court are responsible directly to the court.

Your committee finds that no provision is made for the medical examination of persons supposed to have been injured by assaults or by rape, and none for the treatment of prisoners confined at the Police Court while awaiting trial. The absence of a system of medical inspection of schools has been fully considered in a report presented to the Society some time ago.

Your committee has been unable to find any reason why the medical work of the District should be divided among so many departments and offices of the Government, while all legal work is concentrated in the office of the city solicitor ; all engineering work, in the engineer department, and so on. Any arguments sufficient to justify the splitting up of the medical work seem to be sufficient to justify the division of legal work, the engineering work and other classes of technical work essential to the operation of the Government.

The disadvantage of the present system arises from the fact that the various medical officers referred to are accountable for their professional work, to officers more or less unfamiliar with its ethical and technical aspects ; officers who may in some cases exact too little and in others too much, to the detriment of the public service and to the injury of the professional reputations of the physicians involved. That one medical officer shall be accountable to a lay board, the Board of Commissioners, is inevitable, but other than this it seems to your committee that medical officers should be directly responsible to medical officers and through them to the Commissioners. This would in no way lessen the authority of the Commissioners, but the work of minor medical officials would come to their attention only after having been studied and reviewed by a responsible superior officer, qualified by training and experience to gauge its merits and defects.

The concentration of all medical work in a single office, would tend to establish an *esprit de corps* among the physicians employed by the District Government, not only on account of the more intimate association of such technical employés which would result, but also because it would place all such employés in the line of promotion—an element which practically does not now enter into their official life.

By consolidating the medical work of the District in the manner suggested, coöperation might be readily secured sufficiently direct to provide for the proper investigation of cases involving questions in legal medicine, such as cases of alleged rape, etc., and for attendance on prisoners confined at the Police Court. In the present scattered condition of medical work, the performance of those duties is assigned to no one, whereas, if all medical work devolved upon a single office, they might readily be so distributed as to entail no excess of labor to any one officer, and yet not to sacrifice personal responsibility.

The presence in the department of a considerable number of tried and trained physicians would enable the responsible officer to secure, without delay, such medical assistance as might be needed in outbreaks of contagious disease, and to provide against embarrassment from the absence of individual employés. Outbreaks of contagious disease which necessitate the employment of additional physicians must now be met by the appointment of untried men for the performance of work which is often of the most important character.

The consolidation of the entire ambulance service of the District under the Health Department would similarly allow for the easy and natural expansion of that part of the service relating to contagious diseases, when occasion might require. Horses and experienced drivers would be at hand at a minute's notice for the contagious-disease service, and such additional help as might be required could be safely assigned to the less important work.

The bringing of the Washington Asylum Hospital under the jurisdiction of a general medical department would enable that department to keep in its service immune nurses and other employés who could be transferred to the smallpox hospital when necessary. The places of such helpers in the general service could be filled without difficulty because of the absence of any necessity for the selection of immunes, while it is not always easy

to find off-hand nurses and other help who are not only competent to perform the duties assigned to them, but also are immune to smallpox.

By the consolidation of the medical service of the District in the manner which has been suggested the medical examination of applicants for admission to hospitals and the viséing of certificates issued by physicians generally would be accomplished directly under proper medical supervision, such as it has not now, except as a mere accident arising from the appointment of a physician to fill a clerical position.

The consolidation of medical work would permit economical arrangements to be made for the prompt and accurate examination of specimens of urine, sputa, etc., so necessary to the proper treatment of the sick, but for which no facilities are now at hand, for the use of fire and police surgeons, the physicians to the poor and the Washington Asylum. Except in so far as this work can be done by the general practitioner, or may be done through the courtesy of experts, the patients under the care of the District Government are treated without the benefits which should be theirs through modern methods of diagnosis.

The advisability of establishing a more intimate association between the boards for the licensing of physicians, dentists and druggists and the Health Department has been carefully considered. It seems best that the health officer should not be an active member of any of these boards, but advantage would be gained by making him *ex officio* secretary of all. This would insure the preservation of the records of these boards in a government office instead of having them moved from place to place with changes in the membership of these boards. It would insure, too, the presence at a definite place, during regular office hours, of a responsible officer to furnish information relative to licenses to practice medicine, dentistry and pharmacy, and to receive and receipt for applications for such licenses. Even, however, if the concentration of such work under a general medical department is not deemed advisable for the sake of uniformity and in order to guard against the loss or destruction of the register of pharmacists, druggists licensed by the commissioners of pharmacy should be required to register at the Health Department just as physicians and dentists do now.

It seems to your committee that by the concentration of medi-

cal work in the manner suggested above some more systematic method of examining persons supposed to be insane could be devised. While most of the cases which come under the observation of physicians to the poor and the police surgeons are, it is believed, clearly defined cases of insanity, which require no special training for their diagnosis, yet cases of a somewhat indefinite character may arise and require for the determination of their real nature special study and experience. From the corps of physicians which would exist under the proposed consolidation of medical work, specially qualified physicians could be obtained from time to time, as required, with less difficulty than they can be secured from any single service under existing arrangements.

In view of the foregoing facts, the Executive Committee recommends that the Medical Society take action looking toward the consolidation of all of the medical work of the District Government under a single medical officer, the health officer, and that it formally authorize the Executive Committee to do whatever may be necessary to accomplish this result.

By order of the Executive Committee :

GEO. M. KOBER,
Acting Chairman.

REPORT OF THE EXECUTIVE COMMITTEE ON "A BILL TO REGULATE THE SALE OF VIRUSES, SERUMS AND ANALOGOUS PRODUCTS IN THE DISTRICT OF COLUMBIA," &c.*

The Executive Committee begs leave to invite the attention of the Medical Society to "A bill to regulate the sale of viruses, serums, toxins and analogous products in the District of Columbia, to regulate interstate traffic in said articles, and for other purposes" (S. 4960 and H. R. 13392), and to submit the following report relative thereto :

Although the preventive and curative powers of viruses, serums, toxins, antitoxins and analogous products, when properly prepared, have long since been established, certain unfortunate accidents which have resulted from their administration, notably those which recently occurred in St. Louis, Mo., have tended to

* Reported to and adopted by the Medical Society of the District of Columbia, April 16, 1902.

discredit their use. The extreme value of these preparations in preventing and curing disease renders it of prime importance, therefore, that action be taken to preserve the confidence of the medical profession and of the community generally in them.

Most, if not all, of the establishments now engaged in the propagation of animal products of this character are, it is believed, well equipped for that purpose, but such products are propagated and sold without legal restriction. Any kind of a stable, a little technical skill, and a fair amount of nerve, are all that is needed. As, however, the greater part of the output of these establishments is sold in States other than those in which it is produced, and as it is impracticable to insure the purity of such materials otherwise than by the supervision of their manufacture, individual States are powerless to protect themselves against impure and impotent materials. For these reasons Federal supervision is necessary.

It is impossible to insure the purity of the general stock offered for sale in a community by testing an occasional vial or package purchased in the open market. The prevailing methods of sale are necessarily such that the material vended to-day does not come, except by mere chance, from the same animal as did that sold yesterday, or as will that to be sold to-morrow. The examination of a certain portion of each lot of material offered for sale by each propagator, before allowing such stock to be placed upon sale, would involve intolerable interference with his business, and, moreover, the cost of maintaining an efficient inspection service on such a basis would be prohibitive.

The only feasible method of insuring the purity and strength of viruses, serums, toxins, and analogous products known to your committee is that which this bill seeks to establish, viz : the regulation and supervision by the Federal Government of all establishments engaged in the propagation and sale of such products, so far as such establishments are within its jurisdiction. It seems, however, more in keeping with the spirit of American institutions to separate the legislative and the executive functions which will be called into existence by the passage of this bill, and, in the promulgation of the proposed regulations, to exclude the personal element as far as possible. With this end in view, your committee recommends that Section 4 of the pending bill, which provides for the promulgation of regulations by the Secretary of the Treasury

on the recommendation of the Supervising Surgeon General of the Marine Hospital Service, be stricken out and the following inserted in its place :

SECTION 4. That the Surgeon General of the Army, the Surgeon General of the Navy, the Supervising Surgeon General of the Marine Hospital Service, the Chief of the Bureau of Animal Industry of the Department of Agriculture, and the Health Officer of the District of Columbia be, and they are hereby, constituted a board with authority, subject to the approval of the Secretary of the Treasury, to promulgate from time to time such rules as may be necessary, in the judgment of said board, to govern the issue, suspension and revocation of licenses for the maintenance of establishments for the propagation and preparation of viruses, serums, toxins, antitoxins and analogous products, applicable to the prevention and cure of diseases of man, intended for sale in the District of Columbia, or to be sent, carried or brought for sale from any State, Territory or the District of Columbia into any other State, Territory or the District of Columbia, or from the United States into any foreign country, or from any foreign country into the United States : *Provided*, That all licenses issued for the maintenance of establishments for the propagation and preparation in any foreign country of any virus, serum, toxin, antitoxin or product aforesaid for sale, barter or exchange in the United States shall be issued upon condition that the licentiates will permit the inspection of the establishments where said articles are propagated and prepared, in accordance with Section 3 of this act.

SECTION 5. That the Secretary of the Treasury be, and he is hereby, authorized and directed to enforce the provisions of this act and of such rules and regulations as may be made by authority thereof ; to issue, suspend and revoke licenses for the maintenance of establishments aforesaid, and to detail for the discharge of such duties such officers, agents and employés of the Treasury Department as may, in his judgment, be necessary.

The Executive Committee recommends that this bill, amended as suggested above, be endorsed by the Medical Society, and that the Executive Committee be authorized to take whatever action may be necessary to secure its enactment.

By order of the Committee :

GEORGE M. KOBER,
Acting Chairman.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, April 2, 1902.—The President, Dr. S. S. Adams, in the Chair. Over 48 members and some visitors present.

The following candidates were elected to active membership: Robert S. Beale, S. Clifford Cox, Frank E. Gibson, Samuel H. Greene, Jr., Norman R. Jenner, Eugene L. Le Merle, Henry C. Macatee, Elliott C. Prentiss, Jesse N. Reeve, D. Baen Street, M. Louise Strobel.

Dr. S. S. Adams was appointed by the Society to fill the vacancy in the Vice-Presidency of the Washington Academy of Sciences caused by the death of Dr. Johnston.

The Chair appointed Dr. Neff a member of the Executive Committee to fill the vacancy caused by Dr. Johnston's death.

The fourth recommendation of the report of the Auditing Committee was adopted.

A Board of Survey was appointed to ascertain the value of all property belonging to the Society, including tables, chairs and other articles; Drs. Franzoni and E. L. Morgan.

The Librarian was instructed to report to the Society the names of the books and other effects which would be retained in the Society's library after the remaining books should be removed.

Dr. Kober, for the Executive Committee, reported in regard to the proposed consolidation of the medical work of the District Government. The report and recommendations were adopted, and the President was authorized to send a copy of the report to the Commissioners of the District. See page 269.

The following cases and specimens were presented:

By Dr. Balloch: "Traumatic Rupture of the Spleen." Discussed by Drs. Neff, Bovée and Vaughan. See page 209.

By Dr. Vaughan: "Hernia, Volvulus and Adeno-Carcinoma." Discussed by Drs. Balloch and Neff. See page 207.

By Dr. J. Ford Thompson: "1. Tubercular Peritonitis, Tubercular Arthritis, Rupture of Intestinal Ulcer. 2. Rupture of Adrenal Glands, Peritonitis, Haematuria." See pages 247 and 251.

By Dr. S. S. Adams: "Two Cases of Tubercular Meningitis." Discussed by Drs. Acker and Behrend. See page 238.

By Dr. D. G. Lewis: "Ovarian Tumor." Discussed by Drs. Bovée, Behrend and Chappell. See page 236.

By Dr. Bovée: "1. Fibroid Tumor of Broad Ligament." Discussed by Dr. Parsons. "2. Cancer of Cervix." Discussed by Dr. W. S. Bowen. See pages 241 and 246.

Memorial Meeting in honor of Dr. W. W. Johnston, Wednesday, April 9, 1902.—The President, Dr. S. S. Adams, in the Chair. Over 87 members and many visitors present.

After introductory remarks by the President, memorial addresses

were delivered by Drs. A. F. A. King, Fry, William Osler, Walter Reed, Ruffin, W. P. Carr and Kober. See page 152.

Dr. G. W. Cook made the following motion, which was unanimously adopted: "In view of Dr. Johnston's preëminence, both as a physician and citizen, and in consideration of his devotion to the interests of this Society, I move, as a further evidence of our appreciation of his distinguished abilities, that the addresses which have been delivered here this evening be published in the form of a memorial pamphlet, and that a copy of the same be sent to the family of Dr. Johnston. I move, further, that the committee which was entrusted with the arrangements for this meeting be instructed to report to the Society at its next meeting respecting this matter."

Wednesday, April 16, 1902.—The President, Dr. S. S. Adams, in the Chair. Over 51 members and some visitors present.

Dr. D. S. Lamb, for the Editing Committee of 1902, reported concerning the publication of the *WASHINGTON MEDICAL ANNALS*, particularly the first number. The report was approved and the Committee instructed to conduct the financial affairs of the journal and report to the Society at such times during the year as it might deem proper.

Dr. Woodward stated that the Executive Committee had chosen Dr. Magruder for its Chairman. In the absence of the latter, Dr. Woodward read the report of the Committee concerning "A bill to regulate the sale of viruses, serums and analogous products in the District of Columbia," etc.

The report was accepted, and the Corresponding Secretary was instructed to send a copy to each of the District Committees in Congress. See page 274.

Dr. Franzoni read an editorial from the *Washington Post*, entitled "The Lesson of a Doctor's Life." The Society voted to insert it in the official typewritten volume of transactions, in connection with the proceedings of the meetings devoted to the memory of Dr. Johnston, to whom the article referred.

A vote of thanks was tendered to Dr. Osler for attending and participating in the memorial service for Dr. Johnston, and the Corresponding Secretary was instructed to notify him accordingly.

The President reorganized the Historical Committee, appointing Drs. A. F. A. King, (Chairman), Kleinschmidt and E. L. Morgan.

Dr. I. S. Stone presented a case of excision of rectal stricture. Discussed by Drs. D. G. Lewis, A. F. A. King, Balloch and E. F. King. See page 241.

Dr. Balloch read the paper of the evening—"Intestinal Obstruction." Discussed by Drs. Wood, Reyburn, I. S. Stone, Behrend, C. G. Stone, Jung and S. S. Adams. See page 195.

Wednesday, April 23, 1902.—The President, Dr. S. S. Adams, in the Chair. Over 50 members present.

It was decided to publish the memorial pamphlet in the case of Dr. Johnston, deceased, in the form of a reprint from the transactions printed in the WASHINGTON MEDICAL ANNALS, elaborated with portrait, suitable title page, etc.

The Treasurer was authorized to pay a bill of \$65.00 for the safe recently purchased by the Society.

Dr. D. S. Lamb presented "Two cases of cerebral hemorrhage, and a case of cerebral meningitis, with specimens." Discussed by Dr. A. B. Richardson. See page 248.

Dr. F. A. R. Jung read the paper of the evening: "The work of the Digestive Glands and Estimation of Pepsin Digestion by Modern Instruments of Precision." Discussed by Drs. W. P. Carr, Frank S. Billings, of Chicago, Wm. Ward and McKimmie.

Wednesday, April 30, 1902.—The President, Dr. S. S. Adams, in the Chair. Over 77 members present.

Dr. Adams introduced Dr. A. Jacobi, of New York, who read the paper of the evening: "The Heart Muscle; Pathological and Therapeutical Remarks."

A rising vote of thanks was tendered to Dr. Jacobi, and after the meeting a complimentary "smoker" was given in his honor.

Wednesday, May 7, 1902.—The President, Dr. S. S. Adams, in the Chair. Over 59 members present.

Dr. E. L. Morgan, for the Committee on History, asked as to the kind of history which was desired. The Chair instructed the Committee to consider the matter and report what they thought should be done.

Dr. J. Dudley Morgan presented a case of symmetrical gangrene of the extremities, and exhibited the patient. Discussed by Drs. Nichols, Borden and Carroll.

Dr. J. Taber Johnson read the essay for the month: "Neurasthenia." Discussed by Drs. A. B. Richardson and Vincent. See page 212.

Wednesday, May 14, 1902.—Dr. D. S. Lamb, temporary Chairman. Over 52 members and some visitors present. Dr. Savage introduced Dr. Griffith, of Hyattsville, Md., Health Officer, &c., who headed a committee of physicians (Drs. Griffith, Taylor and Perry) from the Medical Society of Prince George Co. Dr. Griffith explained that the committee came to request the Medical Society of the District of Columbia to join in an attempt to obtain legislation to secure reciprocity for physicians of the District and of Maryland, by altering the District medical-practice law so that it should conform to the terms of the law in force in Maryland. The Chair requested the committee to put its request in writing

and present with it a draft of the proposed legislation, for consideration by the Executive Committee of the Society, and, on motion, the matter was referred to the Executive Committee for consideration and report.

The following cases and specimens were presented :

By Dr. Claytor : Splenic Leukaemia. Exhibition of patient. Remarks by Drs. Lamb and Carroll. See page 252.

By Dr. Pool : Supra-pubic Lithotomy. See page 254.

By Dr. J. P. Miller : Primary Sarcoma of the Omentum. See page 261.

By Dr. Marbury : Pyonephrosis.

By Dr. Bovée : 1, Abdominal Pregnancy : perfect decidua passed on the third night after operation ; 2, Vermiform Appendix ; 3, Sac of Femoral Hernia. The sac was quite perfect ; removed extraperitoneally, though adnexal disease had necessitated opening the peritoneal cavity. See page 250.

Editorial.

ADVERTISEMENTS AND SUBSCRIPTIONS.

The Editorial Committee would be pleased to have the members of the Society interest themselves (as some have already done) in procuring advertisements and subscriptions. Dr. Jackson has charge of advertisements, and will furnish any desired information. Dr. Wells has charge of subscriptions; the rate is one dollar a year, postage paid.

The Committee would especially bespeak for the advertisers the patronage of members, other things, of course, being equal.

Dr. A. B. Richardson, Superintendent of the Government Hospital for the Insane, Washington, D. C., announces that an examination will be held for Internes at the Hospital, Monday, September 1, and that a circular will be prepared in the meantime, giving the conditions under which the examination will be held. The term of service will begin October 1, and notice will be published also in some of the journals of this and the adjoining cities. [We would suggest that persons desiring to take the examination write to Dr. Richardson for a circular.—EDITORIAL COMMITTEE.]

A new medical journal, Volume I, No. 1, WASHINGTON MEDICAL ANNALS has reached us. The Editorial Committee is composed of D. S. Lamb, A. M., M. D.; Walter A. Wells, M. D., and V. B. Jackson, M. D., of Washington, D. C. The journal represents the Medical Society of the District of Columbia, and the initial number is filled with some excellent articles on up-to-date subjects. We bespeak for the journal every success. [*Pacific Medical Journal*, June, 1902.]

Medical Miscellany.

Bureau of Plant Industry, U. S. Department of Agriculture.

THE CULTIVATION OF DRUG PLANTS.—Experiments in the cultivation of drug plants by this Bureau are in progress in several parts of the country, and the relation of climatic and soil conditions to the medicinal properties of plants is being studied. Experiments on a larger scale have been undertaken in Washington and at Dover, Mass. At these places those in charge of the work hope to obtain results on a scale large enough to test the economic and agricultural possibilities of this line of plant industry. Stramonium, the opium poppy, *Cannabis indica*, and digitalis are showing good progress. It seems entirely possible that many of the crude drugs now exclusively imported can be profitably cultivated in this country. These experiments and others which may follow will do much toward testing this possibility.

R. H. TRUE.

School of Medicine and University Hospital, Georgetown University.—This school of medicine was the first in the District to lengthen (in 1878) the course of studies from two to three years. In 1895 it set the example to the other medical schools in Washington of changing the course from night to day sessions, a radical but inevitable step. This step involved pecuniary sacrifices, but the product of the school has improved. Of 74 graduates between 1895 and 1900, 20 applied for admission into the Army and Marine Hospital Service, and of these, only one failed to pass the most rigid professional examination, and we are told by Colonel and Assistant Surgeon General Smart, of the Army, that of the 153 medical schools in the United States, not one can boast of a prouder record and a higher percentage of successes.

The ideal hospital is one connected with a medical school, the professors of which are also the attending staff; consequently in February, 1897, the Medical Faculty decided to make an earnest effort to meet this necessity, and as a result the central wing was ready for occupation in August, 1898. This building is located on the corner of 35th and N Streets, N. W., and has a frontage of 60 by a depth of 50 feet; is four stories and a basement in height, and accommodates 33 beds. The cost of the building amounted to \$20,000, every dollar of which was collected by voluntary contributions. The Medical Faculty have not only given their time and skill without compensation, but quite a number have contributed freely to the support of the hospital.

In 1900 the hospital was enlarged by the purchase of the adjoining property, which is now occupied by the community of sisters and the chapel, and the rooms thus vacated in the hospital



increased our capacity from 33 to 42 beds. In 1901 an additional purchase was made and the property fitted up for 8 patients, so that we can now accommodate 50 patients.

In spite of these efforts, we need more room. Patients are

almost daily turned away for want of shelter, and our real mission is far from complete. We have the real estate, but the present incumbrance of over \$12,000 is all that we can carry, when over 90 per cent. of the patients are charity patients. The growth and usefulness of this noble charity can be best judged by the following figures :

	From Aug., 1898, to Sept., 1899.	From Sept., 1899, to Dec., 1900.	For the year 1901.
Number of cases treated in hospital,	273	331	381
Number of cases treated in dispensary service, . . .	633	769	1,341
Number of cases treated in emergency department, .	491	825	1,025

Among the emergency cases last year there were 23 severe burns, 4 cases of concussion of brain, 103 contusions, 9 dislocations, 39 fractures, 51 cases of lodgment of foreign bodies, 9 of poisoning, 12 gunshot wounds, 456 incised, punctured and lacerated wounds, 5 cases of sunstroke, 5 of shock, and several of profuse hemorrhage. Some of these cases would have perished in transit to other hospitals $2\frac{1}{2}$ miles away, except for timely aid. All this work has been done without a dollar from the general or local government, and could never have been accomplished except for the self-sacrificing labors of the sisters of St. Francis. If we had to pay for the service of nurses and other administrative work, the financial resources would not have permitted us to accomplish one-half of the good work. The Sister Superior in charge of the hospital assists week after week in the common washing of the hospital linen.

The income from the lawn parties held annually at the college campus, amounting to over \$2,000 a year, is largely made up from the savings of the poorer and middle classes in the vicinity. Beside this, the only income consists of about \$1,000 a year from benevolent persons, and the revenue derived from pay patients, amounting to about \$6,000 a year. We need \$20,000 for the construction of an addition which will accommodate 30 more patients, and it is believed that a sufficient number of benevolent friends can be found to guarantee at least the interest on this amount.

G. M. KOBER.

The Woman's Clinic, 1833 Fourteenth Street, N. W.—*President*, Mrs. Emily Lee Ragan; *First Vice President*, Dr. D. S. Lamb; *Second Vice President*, Mrs. W. E. Burleigh; *Secretary*, Miss Elizabeth Clark; *Treasurer*, Mrs. Mary F. Case.

The annual report of the work of the Clinic for the fiscal year shows the number of persons who received treatment, 4,067; of these 858 were new patients; prescriptions, 5,325; operations, 4.

The building fund for a hospital grows slowly. The need for a woman's hospital in Washington is quite apparent, not only to the physicians and members of the Board of Directors of The Woman's Clinic, but to any one whose attention is called to the subject. A large number of women in this city are employed in various capacities. Many, in government offices, are a long way from their homes in distant states, and living in boarding houses. Others have no homes, except the lodgings they pay for with their earnings; and some women of wealth who are here because of our pleasant climate and other advantages, prefer when ailing a woman's care. One room in the building, now occupied, is used for hospital purposes; a few cases have recently been cared for there.

M. F. CASE.

Do not injure The Teeth



70 Capsules in each
bottle.

Sangogen is a predigested organic compound of iron and manganese, in combination with arsenic and strychnia.

Sangogen leaves no bad taste in the mouth, does not injure the teeth, and suffers no deterioration from exposure to air or contact with metal spoons—because put up in dry-filled capsules only, the contents of which touch nothing until the stomach is reached and the gelatine envelope is digested.

Prescribe
*SANGOGEN CAPSULES—One bottle,
and avoid all risk of
substitution.*

Solway-Annann Co.,
Chemists,
Washington, D. C.

“Capsules that make Corpuscles”

WASHINGTON MEDICAL ANNALS

THE CAUSES OF CANCER.*

By ROBERT REYBURN, A. M., M. D.,

Washington, D. C.

The first and probably the most powerful predisposing cause of cancer is senility, or old age, of the tissues and organs of the body. An apparently formidable objection will be at once made to the above statement by citing the well-known fact that cancer is found in young persons, and is sometimes (though rarely) congenital. Whilst this is perfectly true yet it should be remembered that senility is only a comparative term. Many persons are practically as old in their tissues at twenty or thirty years of age as others are at sixty. The real test of old age is not the number of years the person has lived, but the retrograde metamorphosis and degradation which has taken place in the various parts of the body.

When we see the arcus senilis in the eye of a patient, or note that he is suffering from fatty, calcareous, arterio-sclerotic, or other forms of degeneration of the organs of the body, we at once know that this person practically belongs to the class of the aged, and this important fact must always be borne in mind in the treatment of such a patient. This same degeneration of the tissues is often inherited, and this is probably the reason why the offspring of syphilitics, tuberculous patients and drunkards often suffer from cancer at an early age. These children, there is every reason to believe, do not inherit the cancer neoplasm as such, but the resisting power of their tissues is so lessened as to form a suitable soil for its growth and propagation.

The vast majority, then, of cases of cancer occur in persons whose tissues are undergoing degeneration either from advancing age or senile changes. In women about the time of the meno-

* Read before the Medical Society of the District of Columbia, May 28, 1902.

pause and in men of a similar age, when the duties and labors of life begin to seem to be a heavier burden than they were in youth, this disease becomes more prevalent.

Another curious fact is the increasing prevalence of cancer during the last thirty years. Dr. Roswell Park says that if the present increase of cancer in the United States continues from 1899 to 1909 there will be more deaths from cancer than from consumption, smallpox and typhoid fever combined. (*Medical News*, April 1, 1899, p. 399.) Cancer is also increasing in England. In 1898 there were 25,196 cases of cancer reported, or 902 per million of the total population. The male rate was 19.6-10 and the female rate was 10 per cent. greater than the average of the past ten years. (*Philadelphia Medical Journal*, April 21, 1900, p. 887.) In Germany the same fact is noted. In 1898 there were twice as many cases of cancer relatively to the total population as there were in 1879. (*Medical Record*, New York, May 17, 1902, p. 776.)

This relative increase in the number of cases of cancer is found to exist at the present time in all civilized countries, and it should be noted that this is coincident with the great improvements in the diet and hygiene of the population of our great cities, as compared to their condition during past generations.

We would not wish, however, to be misunderstood, or to assert that the increase of cancer is due to the improved hygiene and diet of the present generation, but we believe it to be due to the over consumption of a particular kind of food about which we will speak more in detail hereafter.

Cancer *per se* is not a disease which prevails extensively in hot climates. Especially is it comparatively rare among those races inhabiting hot climates who live almost entirely or wholly upon vegetable foods. It is comparatively rare in tropical countries.

In Borneo it is unknown. Dr. A. B. Dahlgetty says that he has never seen a case of malignant disease of the mamma in a native of Hindoostan. He wonders whether the constant presence of malaria in these countries has anything to do with it. He also calls attention to the want of pressure upon the breasts of the Hindoo women by their thin and light clothing, and in the second place to their habit of suckling their children until the breasts are literally sucked dry. Such a gland would appear less likely to undergo perverted action than a gland arrested while its function is still in full force.

The inhabitants of certain parts of China, Burmah and India suffer comparatively little from cancer, and in certain localities in these countries it is very rare. What is the cause of this comparative exemption? The facts would seem certainly to warrant the assertion that a diet of vegetable food is inimical to the development of cancer.

The second predisposing cause of cancer that we would mention is the habitual use of the various forms of alcohol as an article of diet. No one can deny the enormous amount of evil that is done to the individual who partakes of it, and also to the community as a whole from the use of alcohol as an intoxicant. But there is a more insidious and more dangerous effect upon the tissues of the body from smaller quantities of alcoholic drinks (when taken regularly) than is generally recognized. The dilute forms of alcohol enter into the blood and thence circulate through every tissue and organ of the body.

What is the effect of this? The alcohol, by powerful affinity for the water of the tissues, dehydrates and prematurely hardens them; not only this, but alcohol is a retarder of waste in the body. In other words, it diminishes the metamorphosis of tissue, it hinders the separation from the tissues of the body of those effete and waste products which should be eliminated. These used up and waste matters are retained in the body, and tissue hardening and degeneration of organs are the results. If we may use the simile, the fuel is already for a spark to kindle it, and if we have a local irritation, an injury or necrosis of the living tissue, a malignant or other neoplasm may result.

The above remarks do not apply to the drunkard; we all know what his fate will be. Many persons live daily under the influence of and die from the effects of alcoholic drinks who are never suspected during their lives (except by their physicians) to have used them. The daily use at meals of the various "bitters," &c., is essentially nothing more than a thinly disguised tipping under the form of medication, and produces dire effects in the course of time, especially when at the same time little or no bodily exercise is taken.

The third and most important predisposing cause of all we believe to be the consumption of too much meat and nitrogenized food. If we consider the uses of meat as an article of diet, we will speedily see that it is taken to supply the waste of the muscles

and other nitrogenous tissues of the body. In persons leading inactive lives the consumption of bodily tissue is at a minimum, and hence they need very little meat or nitrogenous food. If these same persons are habitual consumers of alcoholic drinks, even in small quantities, their power of assimilating meat is still further decreased.

In fact, as persons advance toward the close of life their needs for food, and especially for the nitrogenous parts of it, are lessened, and the amount of food given to such persons should be diminished.

Sir Henry Thompson, who is now past 82, says that in old age we ought to diminish the amount of food taken; he further says that half of our ills in old age are due to overfeeding. He also advises and has practiced in his own person the total giving up in later years of the use of alcoholic drinks. (*Jour. Amer. Med. Association*, November 23, 1901, p. 1402.) In persons who consume large amounts of nitrogenous food, and even when they are habitually users of alcohol, the frequency of cancer is greatly diminished when their avocations require them to take a great deal of exercise, or when they perform hard manual labor. In forty-six years of continuous practice we have seen very few cases of cancer (with the exception of lip or tobacco cancer) occurring among men who labor in the open air. The reason, no doubt, is that the waste materials produced in the body are burnt up by hard manual exercise.

The theories on this subject are many and various. We will only consider at this time three of the most important.

First, the theory of Dr. Braithwaite, who recognizes that four chief factors enter into cancer production, viz: over-nutrition, non-oxidation of ingested food, local irritations, and excess of salt in the diet. This last he considers the most important and always present, though it requires the coöperation of at least one, and probably two, of the other factors to make it efficient. The suggestion of the importance of salt as a factor came to him from noticing the infrequency of uterine cancer among Jewesses, whose religion excludes salt pork from their diet. Other considerations in favor of this view in his estimation are the absence of chlorhydric acid in the vomit of gastric cancer; the fact that salt is a most powerful stimulant to all metabolism; the local prevalence of cancer in certain districts and among certain populations where salt is a specially important element in the diet, together with an

excess of nitrogenous food, etc. "Cancer houses are," he says, "probably merely houses where there is accommodation to keep a pig and where the diet consists of a great deal of bacon; or where a great deal of butchers' meat is consumed, and with it, of course, salt; or where the inhabitants are old, but their appetites are still good; or when they are women and live well, but lead indoor lives so that the food is not well oxidized." He believes that with the reported increase of cancer of late years it will be found that there has also been a great increase in the consumption of salt.

Second, the theory of Dr. Harry R. Gaylord, of the Pathological Laboratory of the State of New York. Gaylord has reported that he has found the protozoon of the disease. Whether his theory will stand the test, time alone will determine. Gaylord injected cancerous tissue into the jugular vein of a dog, which died 22 days after, with a distinct cancer in the lung. He also found that the so-called cancer-protozoon and vaccine bodies developed alike when injected into the cornea of a rabbit. Gaylord uses in his experiments the fluid from the peritoneal cavity of patients operated upon for cancer, and from this obtains a pure culture of the protozoon in its hyaline form, 100 animals were inoculated by him, and the same organisms were recovered from different organs in every case examined. In 12 animals, distinct cancers were found.

Third, the theory of Dr. Lambert Lack, of England, that cancer is spread by normal epithelium invading lymph spaces.

He believes that cancer is produced by an abnormal development taking place in normal or healthy epithelium, when invading the lymph spaces of the body. In confirmation of this theory he adduces the results of his experiments with rabbits and other animals. In a number of cases, by introducing healthy epithelium into the abdominal cavities of rabbits, he succeeded in developing cancerous tumors. (*British Journal Pathology and Bacteriology*, 1900, p. 154.)

Dr. Konstanowitch has also succeeded in producing growths not dissimilar from granuloma, and containing epithelioid and giant cells, by inserting spores of lycopodium under the skin. (*Philadelphia Medical Journal*, June 8, 1901, p. 1067.)

Whatever theory we may adopt as to the causation of cancer, there are two facts in history that seem to be now generally admitted. The first of these is that it is probably always local in

its early stages, and the second is that its origin is due to an injury or local irritation of the part affected.

Finally, the writer wishes to summarize by giving the following facts, which seem to him to express the history of the causation of cancer :

1st. Cancer is a disease of senility or decay of the tissues, or at least occurs at the time when the retrograde metamorphosis of the tissues is taking place.

2d. Cancer is comparatively rare in hot climates, and especially where the diet of the inhabitants is composed chiefly of rice, or other starchy foods.

3d. Cancer is very prevalent at the present time where animal food is largely consumed ; the number of cases of cancer has been found to increase in proportion to the increase in the consumption of nitrogenous or animal foods.

4th. The theory of Dr. Gaylord that cancer is caused by a protozoon or animal micro-organism seems to be disproved by later investigations, and the probability is that cancer is simply erring epithelium which has taken an abnormal growth and development.

[For further proof of this see article published in *Journal Medical Research*, Boston, April, 1902.]

DISCUSSION.

Dr. Balloch said that the essay brought up for discussion the most important medical question of the day, viz : how to exterminate cancer and other malignant growths. While the other dread scourge, tuberculosis, was gradually yielding to the assaults of scientific medicine, we were still without the breastworks as regards a cure for cancer. Even its causation seemed to be as far from discovery as ever. The causes mentioned by Dr. Reyburn were contributory only. Cancer is usually defined as "the atypical proliferation of epithelium, with an origin in a matrix of embryonic cells, which may be congenital or post-natal." The word "atypical" distinguished adenoma from carcinoma. If we knew what gave these cells their power to proliferate we should know the cause of cancer. There were two general causes: 1. Excessive power of growth in the cancerous cells, and 2. Diminished resistance of the normal tissues. The last might be due to senile changes, lowered vitality, etc.

He did not believe that diet was an important etiological factor directly ; but excessive use of nitrogenous products, and diminished exercise undoubtedly tended to lower the resisting power of the tissues and to produce changes which predisposed the individual to malignant disease.

The microbic and protozoan theories had not as yet been proven. The following were arguments against them : 1. The liability to cancer increases with age. This is contrary to the rule governing susceptibility to microbic diseases. 2. It differs from the microbic diseases also in the origin of the cells, and the manner of proliferation. 3. The products of metastasis are of the same type as the original growth. 4. It has not been made to conform to Koch's three requirements for microbic disease. Dr. Balloch was inclined to believe that the lymphatics played a very important part in the etiology. The metastasis takes place through them. He believed that the disease originated in the intima of the lymphatic vessels, and, where they are numerous, cancer is most likely to develop.

All present methods of treatment were makeshifts. Perhaps a serum will be discovered which will enable the profession to cope successfully with the dread disease. It must be one which will stop the proliferation without injuring the normal tissues.

Dr. Neff said that no one claimed that the knife was an infallible remedy in cancer, but it was the best treatment we have at present. The reason it does not succeed more frequently is because it does not have a fair chance. The failures are due : 1. To procrastination on the part of the patient and the attending physician. 2. To an incomplete operation : not incomplete from lack of skill, but on account of the advanced stage of the disease. Secretiveness is one of the characteristics of victims of this disease, and they do not consult the surgeon until the pain is severe, the lymphatics are involved, and often metastatic deposits have taken place.

Cancer is one of the very few surgical diseases for which there is a medical future. Sooner or later, serum-therapy, animal extracts, or a combination of drugs, will be discovered that will produce such a reaction as will stop cell proliferation, inhibit the growth of the bacillus, or whatever the cause may be, and will likewise destroy the already-existing malignant growth. Some very good men are working in this line and will eventually succeed. In the meantime we must depend upon the knife, and if it is employed early more favorable results will be attained.

Dr. Wood said that in supporting the theory that a hot climate does not predispose the inhabitants to cancer one should not refer to conditions in India, China and similar countries, where there were no statistics which could be relied upon. Reference to certain countries in South America, however, would be worthy of consideration.

Dr. D. S. Lamb said that cancer attacked some of the lower animals ; hence any cause which applied to man would apply also to them.

Dr. Behrend commended the essay. He thought that alcohol did not enter the blood as such, but was first broken up into sim-

pler products. This was of importance in relation to its irritant effect upon the tissues.

Dr. Parsons inquired as to the relative frequency of cancer in carnivorous and herbivorous animals.

Dr. Lamb said that he had seen more cases in the former, but did not know that this fact was especially significant.

Dr. J. Preston Miller had formulated a theory as to the causation of cancer, based upon his observations in Europe. He had noted that cancer was especially prevalent in the great beer-consuming cities like Berlin and Munich. He had never seen elsewhere so much cancer as in these two cities. It was observed with especial frequency in gynecological practice. On the other hand, it was much less frequent in places where less beer was consumed; *e. g.*, in Paris, where wines are consumed as extensively as beer in German cities, there were fewer cases of cancer than in Berlin. In Munich and Berlin rich and poor alike drink beer. For the poor it was the cheapest food; it cost less than water, because one was expected to fee the waiter for a glass of water, but not for one of beer. From these facts he had come to believe that the excessive drinking of beer was concerned in the production of cancer in the places above referred to. The vegetable theory did not appeal to him, because the Germans were great vegetable eaters.

As to the rarity of cancer of the breast in India, one would naturally think of the deterrent effects of sunlight upon the naked breasts of the Indians, in view of our present theories as to the efficacy of the X-ray treatment. On the other hand, however, he had observed in this country, among farmers and those exposed much to the sun, that cancer attacks the exposed parts of the body as frequently as those which are covered.

Dr. Wood asked Dr. Lamb whether cancer specimens do not keep as well in alcohol as in any other preservative agent, and being answered in the affirmative, suggested that this fact militated against the theory that alcohol was a cause of cancer.

Dr. Keech believed that the two most important predisposing causes were excessive consumption of nitrogenous food, and imperfect elimination of waste products. Cancer was less frequent in hot climates because elimination is favored by the increased activity of the skin; the natives also eat less meat. The most important exciting causes were the effect of the waste products upon the glandular system, and local injuries. As an illustration, he related a case in which carcinoma of the breast resulted from a contusion. The growth made its appearance a year or two after the receipt of injury, and eventually caused the death of the patient. He had long been convinced that the knife was a failure in the vast majority of cases. He had known of a few cases of permanent cure by escharotics. In one undoubted case of epithelioma of the lip, there was no recurrence, and the patient lived twenty-five or thirty years afterward.

Dr. F. R. Hagner related a case in which cancer followed a blow upon the leg. There was at first osteomyelitis of the tibia. Operation was performed, and the wound had nearly healed, but refused to close entirely. A month and a half after operation, examination of the fistulous tract showed carcinoma. The leg was removed, and the growth was found to have spread very widely from the original focus.

Dr. Behrend had known of permanent cures by the knife—one by Dr. J. Taber Johnson. The patient was 64 years of age; there had been no recurrence since the operation, five years ago; the diagnosis was confirmed by the microscope. He had seen many instances in which a tubercular progeny had come from a cancerous parentage.

Dr. Lamb remarked that it was a rare thing to find the two affections associated in the same individual. The fact that in many cases there was no recurrence after removal of epithelioma was well known to surgeons.

Dr. Kleinschmidt said that he had cut out epithelioma of the lip in two or three cases, and there had been no recurrence. This was the rule when enough tissue was removed.

Dr. Neff said that epithelioma of the lip was most amenable to surgical treatment if operation was performed early. Failure of the knife was in most cases due to procrastination.

Dr. Kleinschmidt spoke of a case in which a cancer of the breast was removed very thoroughly in Baltimore, yet the growth returned, and death resulted within a year.

Dr. F. R. Hagner emphasized the importance of an early and thorough operation. Inattention to these requisites was responsible for many failures. He had never had trouble in getting the skin to unite over the wound. He had seen but one death following operation for cancer, and that one resulted from streptococcus infection.

Dr. Cook thought that in almost all cases cancer was started by a traumatism. As an instance he mentioned Dr. Vaughan's specimen of May 12—sarcoma of the knee following a sprain. A local irritation and a subnormal condition of the tissues were probably the most important etiological factors. Caustics could not be compared with the knife as a means of eradicating these growths.

Dr. Reyburn said that practically, all were in accord as to the proper treatment for cancer. The main object of his paper had been to bring out discussion as to the causation of malignant disease. If this were known, treatment would be much more successful than it is at present. Of late his faith in the efficacy of the knife had been somewhat shaken, owing to the many failures which had been reported. These were due mainly to the fact that the knife left a raw wound which was open to fresh infection by the cancerous material. Searing with the cautery would prevent this to a great degree.

In inoperable cases the X-ray should be employed to ameliorate the symptoms, and, if possible, to stay the progress of the disease. It appeared to do this in many cases. The cautery, X-ray and similar measures all acted in the same way, by exciting a reaction in the tissues which was inimical to the further development of the disease.

TWO CASES OF LIGATION OF CAROTID ARTERY FOR INOPERABLE MALIGNANT GROWTH.*

By ARTHUR A. SNYDER, M. D.,
Washington, D. C.

1. The patient was an elderly white man. The growth involved the floor of the mouth, soft palate, pharynx and adjacent parts. When admitted to hospital he suffered greatly from dyspnoea and dysphagia. He was told that a radical cure was impossible, but that an operation gave promise of relief. He was practically *in extremis*. Dr. Snyder ligated the left external carotid and the right common carotid arteries. The patient survived but a short time, during which the symptoms were decidedly relieved.

2. Middle-aged negro. Epithelioma of left side of floor of mouth, involving pillars of fauces. He ligated the external carotid on that side. Patient did well for three weeks, and the growth appeared to diminish in size. Hemiplegia developed; he re-entered the hospital, and died three weeks afterward.

The autopsy showed that the ligation itself had been successful. The ligatures were properly placed, and there was a well-organized clot back to the bifurcation of the common carotid, where a portion of the clot probably became detached and lodged in the brain as an embolus and produced the softening. Wyeth says that hemiplegia not infrequently happens after ligation of the carotid arteries.

DISCUSSION.

Dr. Balloch said that the method used by Dr. Snyder was in accordance with advanced surgical work upon inoperable malignant growths. Dawbarn had made a specialty of this line of treatment and had obtained some remarkable results. He emphasized the point that in addition to ligating the carotids the surgeon should dissect out every branch which, through the establishment of collateral circulation might cause the growth to be nourished anew. Injury to the veins should be carefully avoided. The same methods were being used in the treatment of cancer of the uterus, and inoperable abdominal growths.

* Reported with specimens to the Medical Society of the District of Columbia, May 21, 1902.

CASE OF SARCOMA OF KNEE.*

By GEORGE T. VAUGHAN, M. D.,

U. S. M. H. S.

Colored man, age 37. Two years ago he sprained the left knee. It troubled him much thereafter, and at the end of about two years began to swell. For eight or ten months it increased rapidly in size. The diagnosis of sarcoma was made, and amputation of the hip was done April 12, 1902. Dr. Vaughan was unable to do Wyeth's typical bloodless operation on account of an incision which was made necessary by the presence of a diseased gland in the groin. He used the skewers and elastic tubing, however, and there was no hemorrhage from above. The man recovered. Esmarch's bandage was contra-indicated on account of the danger of forcing sarcomatous elements into the general circulation. This was the fourth time that Dr. Vaughan had performed amputation at the hip joint. His mortality was 50 per cent., but two of the patients required double amputation, and three of the cases were traumatic.

DISCUSSION.

Dr. Snyder congratulated Dr. Vaughan on his results. Dr. Snyder had performed hip amputation twice, and in both cases recovery resulted; but they were not traumatic cases. The operations were almost bloodless. It was very easy to control the hemorrhage. Last year he did an amputation at the shoulder with surprisingly little hemorrhage, by picking up the arteries, as in ligation of femoral or axillary arteries, and controlling the circulation by loops of silk. The ease with which the circulation could be controlled in this way was remarkable. The loops could be left *in situ* for several hours without harm.

Dr. Neff said that the sarcoma was undoubtedly of periosteal development, this being peculiar to long bones. The surgeon would undoubtedly be tempted in a case of this kind to amputate below the hip, but Dr. Vaughan had done well to amputate at the hip joint, as was shown by the presence of the diseased glands in the groin. He congratulated him upon his result.

Dr. Acker called attention to the fact that the first amputation at the hip in this country was done by Dr. May, a member of this Society, in the '40's. He subsequently exhibited the patient in different parts of the country and also in Europe, because of doubt that the operation had been done.

* Reported with specimen and patient to the Medical Society of the District of Columbia, May 21, 1902.

Dr. Vaughan, in closing, congratulated Dr. Snyder on his success, but emphasized the fact that in his own work three of the cases were traumatic. This always gave a much higher mortality than disease requiring the operation. He also had had 100 per cent. of recoveries in the one case in which the cause was not traumatic. He commended the method of controlling the circulation mentioned by Dr. Snyder.

CASE OF ACUTE PEMPHIGUS.*

By SAMUEL S. ADAMS, A. M., M. D.,

Washington, D. C.

The cadaver which I present to-night exhibits a rare affection. In many respects the history of this case conforms to that given by text books on general medicine and pediatrics, but is lacking in one or two features. The rapidity of the fatal issue in an apparently healthy and well-nourished infant is contrary to the statement of authors that acute pemphigus affects the poorly-nourished, emaciated infants of institutions in unhygienic conditions. This child was, to all outward appearances, healthy, and was gaining in weight each week upon modified (uncooked) cow's milk, suitable for its age. The disease also usually follows an acute infectious disease, but our patient had not had any illness prior to this.

From the appearance we have no hesitancy in classifying it under the gangrenous variety.

The following history speaks for itself :

William O., age 4 months, white, was admitted to Washington Foundling Asylum when 3 days old. Nothing known of family history. Incidents of labor and birth unknown. Had no acute illness up to present one, and had always been considered a very healthy and well-nourished child. Had been gaining steadily in weight since admission ; weight, 10 pounds and 7 ounces.

Present illness began on morning of May 15, 1902, with slight cough and coryza, anorexia and marked restlessness, and there appeared on lower portion of abdomen two small vesicles surrounded by only a very slight area of hyperaemia, and on the following morning both had disappeared.

May 16, temperature taken at 3 P. M., 105.2 ; respirations and pulse accelerated ; child very irritable and restless. About mid-

* Reported with specimen to the Medical Society of the District of Columbia, May 21, 1902.

dle of day an eruption appeared consisting of bullae from size of a pea to a large nut ; first seen on head, then spreading to face, back, groin and limbs, rapidly becoming tense and filled with serum ; irregularly distributed over the body and surrounded by but a slight area of inflammation.

May 17, 1902, the eruption continued with greater severity ; the bullae ruptured and disclosed a raw surface, which rapidly became darker in color and finally purpuric. The skin over the body, and especially over hands, feet and back of head, became soggy, and upon slightest pressure the superficial layers of epidermis were dislodged and easily pulled off. General condition of child very bad ; complete anorexia ; temperature remittent and very high.

May 18, new lesions continued to develope, and at 12 P. M. death occurred, preceded by coma ; no convulsions ; last temperature before death, 102.

Throughout the illness the temperature remained high and remittent in type, ranging from 105.5 to 102. The necropsy, by Dr. Thomas Grasty, revealed nothing abnormal.

DISCUSSION.

Dr. Carmichael said that the case was interesting, as it illustrated a very rare condition, pemphigus being a rare disease in this country, 183 cases being reported in a total of 123,746 cases in the statistical tables of the American Dermatological Association from 1878 to 1887. This was undoubtedly an instance of acute pemphigus. The affection attacked cachectic and ill-nourished children, but it was occasionally observed in others. The bullae have no areolae, but spring up at once from the seemingly healthy skin, though an areola may or may not form later. The mortality was high. The disease frequently followed the exanthemata and syphilis ; here, however, there was no history of the latter. It would be interesting to know whether there were any cases of infectious disease in the institution where this child was cared for.

Dr. Vale suggested that if this was a case of an acute infectious disease, cultures and microscopical examination of the blood, etc., would have thrown some light upon the etiology.

Dr. Carmichael said that it was to be regretted that such examinations were not made. The disease was undoubtedly of bacterial origin ; but little was known beyond the fact that it was due to the pyogenic cocci, though the tropho-neurotic theory of the disease is also believed.

Dr. J. Preston Miller said that he was glad to hear Dr. Carmichael refer to the part syphilis might play in the causation of the disease. Dr. Adams had said at one time that there was no history of syphilis, and at another that the child was a foundling, and hence there was no history whatever obtainable.

Dr. Carmichael replied that in this particular case there had been nothing to show that the child had a syphilitic history.

Dr. Adams, in closing, said that in a foundling asylum it was impossible, in most cases, to tell whether a child had a syphilitic history or not. Contrary to the general belief, however, syphilis was comparatively rare in the institutions of the kind with which he had been connected. In all his experience he had never seen a case like this. The sudden onset, rapid progress, and death within the first twenty-four hours excluded syphilis as a cause of death; but they gave support to the view that acute pemphigus was an infectious disease, and this was undoubtedly the case here. Cultures would have been taken if he had not been out of the city at the time of the child's death. Three or four years ago he saw a case of pemphigus in the Children's Hospital; thirty or forty bullae would appear between visits and disappear. The child recovered, and, so far as he knew, had no recurrence of the trouble.

MEDICAL EVOLUTION.*

By JOS. T. HOWARD, M. D.,
Washington, D. C.

With the ancient Greeks was a myth that seemingly had as a historical basis the biblical account of the Tower of Babel: Ephialtes and Otos, great giants, sons of Alvius, had new digits to grow upon their hands each month. When only nine years old, exulting in this distinction and their strength, they undertook to scale the heavens by piling Pelion upon Ossa, and lesser mountains upon these. Indignant at such presumption, Apollo slew them with his bow and arrows, lest they should succeed and learn the secrets of the gods. This fable is self-explanatory and somewhat accords with the serpent's declaration to Eve: "When thou eatest thereof ye shall become as gods, knowing good from evil."

From the time to which the memory of man runneth not to the contrary, knowledge has been eagerly sought after and is yet increasing in the world:

Pride still aiming at the blest abodes,
Men aspiring to be angels, angels gods.
If, aspiring to be gods, angels fell,
Aspiring to be angels, men rebel.

* Read before the Medical Society of the District of Columbia, May 21, 1902.

Wise and considerate men in all ages have sought to classify the accumulated lore and formulate science.

Plato greatly desiderated what he would call the crowning practical science—the production of happiness by a skilful application of all existing resources to best the manner of living. Such portions of knowledge as have been generalized, systematized and verified have been called Science, and, it may be added, Art.

A science consists of certain principles to be known—an art of particular rules of something to be done—says Berkley.

Science cannot discover anything but what God has created and ordained. Art can only apply rules for things to be done for the comfort, convenience and happiness of man.

Disease is an entity that man, to his sorrow, too sensibly experiences ; to alleviate the pains thereof, is the province of the physician. Medicine, then, viewed in this light, is the first of sciences and the noblest of arts, because it seeks to understand the principles of life, suggest and apply the means :

How the fickle fabric to support
Of mortal man, in healthy body how
A healthy mind, the longest to maintain.

Compared with the achievements of these ends all other accomplishments fade into insignificance. For what avails it to know the motions of the sidereal heavens, to solve the most abstruse problems of mathematics, to have the skill of a Phidias or an Angelo to design, the tact of blending colors of a Raphael, if the mind cannot appreciate nor the eye discern, or if the body is too faint and feeble to wield the tools to carve a statue or adorn a canvas ?

When Greece and Rome were still immersed in barbarism medicine was known and practiced in Egypt, although no public record of its status is afforded us until B. C. 1452, when the Pentateuch was first promulgated ; from it we infer that its author, Moses, who was learned in all the sciences, arts and mysteries of the Egyptians, obtained from that people the knowledge of the principles of medicine, hygiene and sanitary science that he so efficiently put into practice for the benefit of the Israelites during their wanderings through the wilderness of sin, principles that have formed the basis of the sanitary laws in operation among all civilized nations of the world to-day.

About one thousand or more years subsequent to the time of Moses, he whom Cicero has styled the Father of History, Herodotus, wrote of this same people—the Egyptians: “The art of medicine is thus divided among them; each applies *himself* to one disease only and not more.”

“All places abound in physicians; some physicians are for the eye, others for the head, others for the teeth, others for the parts about the belly, and others for internal organs.”

From the land of the Pharaohs also was learned that knowledge of the healing art “which Chiron gave and Esculapius used” among the Greeks. From them also Pythagoras, Democritus and Heraclitus learned and so advanced the medical art as to enable Hippocrates, with his sons, Thessalus and Draco, and son-in-law, Polybus, to establish certain principles, derived from general facts, styling themselves Dogmatics. This advancement of the Greeks, reacting upon the Egyptians, resulted in the promotion of greater zeal among the learned in the profession, and led to the establishment of the University of Alexandria, under Ptolemy II, in which institution Erasistratus and Herophilus were prominent teachers. The former believed in and taught moderation in bleeding and in the use of purgative medicines, which, it appears, were then too freely in vogue. He also suggested the necessity of relying more upon the *vis medicatrix naturae* than drugs.

About 300 B. C. one Seraphim, a pupil of Herophilus, made himself leader of another sect, the Empyrics, after which came the Methodists, claiming to hold middle ground between the Dogmatics and Empyrics. One of the leaders of this sect, Asclepiades, a Bythinian, became very popular, it was said, by catering to the whims of his patients.

In Rome, during the last century B. C., Celsus, called the Roman Hippocrates, on account of his industry and writings, became eminent in his native city. His influence dominated the medical world until A. D. 150, or until the coming of Galen, whose authority in medical matters was unquestioned as late as the sixteenth century, when his writings were publicly burned by the arch-prettender and egotist, Paracelsus, by which act, “like the aspiring youth who fired the Ephesian dome,” this egomaniac is only known to posterity. It was in this century also that Vesalius established practical anatomy. He was followed by Eustachius, Fallopius, Asselaus, Harvey, Malpighi, Glisson, Sylvius and

Willis, whose names, more enduring than brass, will ever live co-existent with the study of anatomy. Contemporaneously with these originated the long-time popular humoral pathology. Then came the mathematics and vitalists, Van Helmont leading the latter, in which, subsequently, he was, to a limited degree only, supported by Stahl and Hoffman. The seventeenth century gave to medicine Cullen and Sydenham, the last the greatest of his age and of unfading fame. Following in the eighteenth century came Boerhaave, Van Swieten and Haller, the latter regarded as the father of our modern physiology. With him came the dawn of a new era that was only clouded by Brousseau and Brunonianisms, which *isms*, having had but an ephemeral existence, soon closed all sectarianism in medicine worthy of notice, until, in our own day, others too numerous to mention, having had the pace set in 1810 by Hahnemanism, working along the same heterogeneous lines, have given birth to many more *isms*, such as Dowie and Eddyisms, osteopathy and others that are mere rubbish. We need not wonder at these. "Galen," in his day, "complained that his patients were more obedient to the oracles in the Temple of Esculapius, and their own dreams, than to his prescriptions," whilst at a more recent period Lord Bacon asserted that, "in the opinion of the ignorant multitude, witches and impostors have always held competition with physicians ;" and, as in the past, so it must forever be, it seems, that these offsprings of ignorance, credulity and superstition will cling to medicine like the curse of Elijah to his servant, Gehazi.

Be that as it may, we have not to do with them ; it is the good, the beautiful and true in science that interests us now ; of those who have labored for the welfare of mankind, generally, more than for any benefits to accrue to themselves, individually, and, however puerile, in the light of our present knowledge, we may deem their works to have been, it is to be borne in mind that they were giants in their day, men of renown, devoted, perhaps, rather to the cure than to the cause of disease ; nevertheless, they have handed down to us systems of therapeutics, pathology and nosology, at once scientific and explicit, that are monuments to their industry and achievements, which cannot be ignored, even in the boasted enlightenment of to-day. Neither can their coadjutors, their contemporary coworkers in the collateral sciences, who, whilst the former were engaged in erecting the science of medi-

cine, were endeavoring to discover the cause and effect of things in general. Consequently their studies, not infrequently, led them to hew close to the border lines of, and often to encroach upon the domain of medicine itself. Famous among these we note, as early as 601 B. C., Anaximander, who discovered the obliquity of the ecliptic, and introduced maps and globes into Greece. He was the first of physicists, and, perhaps, the prince of biologists. He maintained that all living beings originated from putrefying substances. His theory was sustained down to 460 B. C. by Empedocles, and in 354 B. C. by Aristotle, who taught "That every dry body which became moist, and every moist body that became dry, produced living creatures, provided it was fit for nourishing them." These opinions prevailed for more than twenty centuries, when Kircher described certain animals which he saw produced by the transforming influence of water on pieces of stems of various plants. It was this same Kircher that first advocated the theory that contagious diseases were derived from animalculae, in which he was sustained by Linnaeus, to the extent, at least, says Holland, of publishing some articles upon the subject in the *Amoenitates Academiae* regarding small pox, measles, plague and syphilis, which are there set down as caused by acari.

In 1815, A. D. Cardon contended that fishes originated from water, and other animals from fermentation, and further Van Helmont, gave special instructions for the artificial propagation of mice. In 1836 Schwann and Latour discovered torula cerevisiae in the fermentative process, which seemingly supported those ideas, and in 1854 Pouchet contended for the same views, which were amplified (1872) by Bastian, in his *Archibiosis*, and the germ theory began to dawn upon us, notwithstanding that, in the meanwhile, Schultz by his classical experiments, had proved the aerobic origin of all then known minute organisms. To this ocular demonstration of Schultz may be traced the principles of *asepsis* utilized by Lister and now so generally availed of in the canning of fruits, meats and vegetables.

All are familiar with and know what constitutes a germ. Lexicographers tell us that the word "germ" is derived from the Latin *gerere*, to bear. Physiologically considered, it is that which is to develop an embryo, a point of growth, an ovary, a bud, as the germ of a fetus, a plant or flower. It is specifically described in

Genesis: "And God said, let the earth bring forth grass, the herb yielding seed, and the fruit tree yielding fruit after his kind, whose seed is in itself upon the earth; and it was so. And the earth brought forth grass, and herb yielding seed after his kind, and the tree yielding fruit, whose seed is *in itself*, after his kind, and God saw that it was good." An ocular demonstration of this and the formation of a germ is afforded in the winged seed of the sugar maple; there may be seen the plantlet, or embryo, cosily tucked away in its bed of starch, awaiting the conditions favorable to its further growth—Heat, Air, Earth and Moisture. The common egg suffices to exemplify the germ of oviparous animals, the white thereof being albumen combined with calcium phosphate, and the yolk, which is chiefly the same, with some oily matters and traces of iron and sulphur, all of which surround the germinal spot, the embryo, as in the case of the vegetable germ, which only awaits the requisite heat and moisture to begin its development into the form and likeness of its parent.

From the above brief explication we deduce the well-known and incontrovertible fact that each and every germ is the embodiment of some form of life which, in its integrity, is the very antipode of, and always at variance with, disease. It is true that there is now and ever has been a kind of internecine war going on between all species of organisms resulting in wounds, bruises and putrefied sores from which disease may ensue.

Every living creature
Is in a state of war by nature,

says Crabbe, whilst the Dean of Westminster, Swift, declared that—

Naturalists observe a flea
Hath other fleas that on him prey,
Whilst these have some other flea to bite 'em,
And so proceed *ad infinitum*.

From this war there can be no discharge; it has raged incessantly ever since the creation of the first protoplasm of Paleozoic time, in which was the real archibiosis upon this terrestrial sphere, and has augmented *pari passu* among all kinds of beings in their successive engenderings, and is still rife in their midst. Even man himself, the paragon of animals, made in the likeness of his Creator, exemplifies and emphasizes the dreadful carnage upon his own and other species more than all inferior beings; indeed,

he urges on the strife, which, it seems, must go on, and on, until the last vestige of life shall have disappeared from our planet, and time shall be no more.

We might cite as an apt illustration of this warfare waged by the mosquito tribes upon mankind by taking the insidious anophele. Imagine one sitting upon the bed frame awaiting the somnolence of its intended prey to pounce upon him, puncture his cuticle, and inject the virus, that, at the dawn of day, is to promote a spoliation in the corpuscles of the guileless victim, saturating him with malaria, and leaving him to shake, whilst *Culiceum* keeps the even tenor of his way along the cool, sequestered vale of life. Even so, bacteria, microcoeci and allied animalculae, armed with diphtheric, typhoidal, and other kinds of poison more venomous than the "Aqua Toffa" of the Borgias, lurk around in search of suitable hosts in which to colonize, fatten, grow old or die in their own excrement, leaving their proles to do likewise until exhausted, or their disintegrated victim is entirely consumed by them, and such other small deer as may partake of the feast.

Hitherto, with our progenitors, the subtle disease-exciting forces threatening the germ were supposed to have their lurking places in the surrounding elements themselves—heat and cold, drought and moisture, electrical and meteorological changes—but under this new dispensation the implications are that the cause of disease and disintegration lies in the germs individually inflicting injury upon each other, and per consequence making all maladies to be of traumatic origin.

It has been truly said that neither health nor disease can be satisfactorily defined. Disease is coeval with life itself, and follows in its wake as darkness doth the light; or, like the wind, we cannot tell from whence it cometh or whither it goeth. We cannot draw the line of demarcation between the one or the other until we understand what is life itself. The more we learn of life, the more we may know of disease. "What is life?" asks Schmid. "Life is the activity of matter according to the laws of organization," he replies. "What is organization?" inquires Kant. Replying thereto, he says: "An organized product of nature is that in which all the parts are mutually ends and means." Thus, according to these distinguished philosophers, organization involves the idea of ends and means rather than cause and effects,

as in physics, which physiology may reveal to us, because disease is a state in which the vital forces are deprived of their means, and therefore cannot attain their proper ends without a medicament. "Physiology," says Bichat, "is to movements of living bodies what astronomy, dynamics and hydraulics are to the physical sciences," but these have no branches which hold relation to them that pathology does to physiology. A medicament is repugnant to physical science, for its object is to bring the properties of the system back to the normal type. Physical properties never depart from that type, and need not to be brought back to it; so there is nothing in physics to hold the place of therapeutics to physiology. Gravity, affinity, elasticity, never act in a diseased manner nor fail in their purpose. Organic forces act for the preservation of the system in which they reside. If they do not do this, they are deranged, diseased, for disease is a state in which the vital forces do not attain their final ends—not any more through hindrance by parasites or traumatism from other sources than on account of chemical action, composition and decomposition, which are to be distinguished from the mere mechanical forces that obtain in the parasitic warfare, in which a cell, being injured, will, under favorable circumstances, repair itself, but having once become decomposed, never, because its elements go to make up some other organism. Consequently, if the germ theory prevails, the inferences are that disease is altogether from traumatic causes; for there can be no difference in an injury, whether to a single cell or a combination of cells that constitute a composite being; and therefore if we have any pathology at all it must be surgical, when lo! the physician's occupation has gone, whilst the surgeon ultimately reigns *medicinae arbiter excellentissima*.

CASE OF CONGENITAL STENOSIS OF PULMONARY VALVE.*

By D. S. LAMB, A. M., M. D.,

Washington, D. C.

From a colored girl who died when 5 years old of chronic pericarditis with an acute exacerbation. The right side of the heart

* Reported with specimen to the Medical Society of the District of Columbia, June 11, 1902.

is much hypertrophied, compensative, of course, to the stenosis, but the right ventricle is not dilated, rather contracted. The three leaflets of the pulmonary valve form a dome with a central opening, which, unfortunately, was cut through when the heart was incised. The pericardium is thickened and coated with lymph. The child was in hospital two years with general weakness, especially of lower limbs, and the respirations were often, though not always, disproportionately frequent as compared to the temperature and pulse. With a normal temperature and a pulse scarcely above normal, the respirations would be from 30 to 60. Her fatal illness began April 24, 1902, with temperature 103, pulse 128, and respiration 28; vomiting greenish and liquid. 27th, her condition began to improve, and so continued, though slowly, until May 2, when the pulse and respiration became more frequent, the temperature much of the time rather subnormal. May 1, there was much cough, which became worse. Died May 7. The necropsy, made by Dr. Lamb, showed bronchitic exudate in both lungs, and the heart, as described.

DISCUSSION.

Dr. Acker said that it was wonderful that children could live at all with the serious congenital malformations of organs sometimes observed; yet this child, having from birth a serious valvular lesion, not only lived, but suffered merely from weakness of the legs. Undoubtedly, the careful attention which it received during the two years of hospital life prolonged its existence. He had before presented a specimen showing congenital hypertrophy of the heart, but the patient suffered severely from symptoms due to the lesion.

Dr. S. S. Adams said that such cases were both interesting and sad. It was surprising how much damage the heart could stand after birth, and how slight an ante-natal lesion might be the cause of death. Recently he had had a patient 10 years old who had a congenitally patulous valve. These patients rarely survive the 12th year, and he so informed the mother. Whether puberty had anything to do with death at this age he did not know; but two other patients, having rheumatic disease of the heart, have passed the menstrual period without trouble.

Dr. D. S. Lamb said that the specimen recalled one which had been presented to the Museum by Dr. Kleinschmidt several years ago; it had the same dome-shaped valve. Apparently, the cardiac lesion had not been the direct cause of death.

CASE OF SARCOMA AT THE KNEE.*

By V. B. JACKSON, M. D.,

Washington, D. C.

J. P., a colored woman, age 18, presented herself, in August, 1901, at the Dispensary Service of the Emergency Hospital, Washington, complaining of a painful swelling at outer side of left knee. Had had a sprain of the knee 8 years before and about that time a small swelling began, which slowly enlarged but did not trouble her until one year ago, when it started to grow rapidly and was attended with considerable pain.

A hard and painful tumor, size of an orange, was seen over the head of the fibula and covering pretty much the adjacent tuberosity of the tibia, and was firmly attached to both bones. Flexion and extension were very painful and the muscles above and below the knee were much atrophied.

She refused to have any sort of operation done, but the excessive pain and interference with locomotion became so great that she returned to the hospital early in December, 1901, and Dr. Jackson excised the tumor. The disease seemed to involve the muscles around the fibula for three inches down the leg, and it was necessary, therefore, to excise about three inches of the bone. Practically all the tissues were taken from the tuberosity of the tibia. Slight suppuration followed, but this was considered favorable, since it was impossible to remove all the disease. The wound healed, and patient left hospital five weeks after operation.

Dr. Balloch saw her shortly afterwards at Freedmen's Hospital, where she went because of a slight ulceration over the site of operation. He at first thought the trouble was returning, and advised amputation; but the ulcer finally healed, she was thought to be well and was discharged.

May 29th she was at the Washington Asylum. The pain had returned some weeks previously, and the tumor was rapidly recurring.

Microscopical examination of the growth by Dr. James Carroll showed it to be a small spindle-celled sarcoma. [Amputation in the thigh was subsequently done by Dr. Jackson. The patient recovered.—EDS.]

* Reported with specimen to the Medical Society of the District of Columbia, June 11, 1902.

TWO CASES OF TYPHOID FEVER.*

By D. S. LAMB, A. M., M. D.,

Washington, D. C.

The first case was that of a colored man, age 28, who died on the 21st day, the day after admission to hospital. Besides the ordinary symptoms of the fever there was hemorrhage from the bowel. The necroscopy, by Dr. Lamb, showed some emaciation, the ileum studded with sloughing ulcers of Peyer's patches, and a diverticulum which contained an ulcerated patch and much blood; spleen, 12 oz. and soft; mesenteric glands, enlarged; oedema and congestion of lungs.

The second case was that of a robust white soldier, age 23, who died about the 18th day at the Washington Barracks Hospital; Dr. J. H. Ford, U. S. Army, attending. During the first week he attended to his duties as usual, and then reported for treatment and was admitted to hospital. There was nothing unusual in his symptoms until the day before his death when there was a sudden increase of pain with hiccough and persistent vomiting; the temperature suddenly rose to 106, pulse 138 and respiration 46. The necroscopy by Dr. Lamb showed that *only the last two feet* of the ileum were involved; the ulcers were deep, and one had two small perforations; there was general peritonitis; spleen, 16 oz. and soft; mesenteric glands, enlarged; congestion and oedema of lungs.

CASE OF ANEURISM OF ABDOMINAL AORTA.*

By G. N. ACKER, A. M., M. D.,

Washington, D. C.

From a man, age 68; was seen last summer for Dr. Acker by Dr. Watkins, who discovered the aneurism. Dr. Acker found that the patient had a tumor to the left of the median line of the abdomen, extending from beneath the ribs downward to the umbilicus. There was no bruit. The tumor caused only a moderate discomfort. Drs. Carter and Nash were called in consultation, but the position of the tumor, absence of bruit and other features

* Reported with specimen to the Medical Society of the District of Columbia, June 11, 1902.

left the diagnosis in doubt. At about 1 A. M. on the day of his death he was seized with an agonizing pain, and died at 7 A. M.

The necroscopy, made by Dr. D. S. Lamb, showed a large fusiform aneurism involving the entire length of the abdominal aorta. It had ruptured anteriorly into the retroperitoneal connective tissues, forming an extensive hematoma. The heart was fatty, and its coronary arteries calcareous. The abdominal aorta and branches were also calcareous. There was hydronephrosis of right kidney; the left kidney and the other abdominal viscera were normal.

AN ELECTRIC LAMP FOR EXAMINING THE CAVITIES OF THE BODY.*

By R. S. LAMB, M. D.,

Washington, D. C.

The instrument which is presented was invented since the first of the year 1902, and patented March 11. It was called to my attention while in Philadelphia two months since.

The lamp can be used in examination of the oral, vaginal and rectal cavities, is easily sterilized, is portable (for use at the residences of patients) and overcomes the difficulties attending the use and manipulation of those now in general use.

The attachable mirror is centrally perforated, allowing the rays of light to pass from the lamp behind and give a strong illumination; a direct picture is reflected. It works on a swivel, thereby giving numerous positions for observation.

The battery to which the lamp is attached is of $3\frac{1}{2}$ volts strength, and can be bought at any hardware store for thirty cents. For office use, if there is electric light, a current lamp, in place of the ordinary 16-candlepower lamp, can be used instead of the battery, and be in readiness at all times, as there is a make-and-break attachment on the handle of the instrument.

The lamp is useful in laryngeal, pharyngeal and postnasal examinations and treatments, and as well for operations in the different cavities. It has been working successfully for five months. The price of the current lamp is two dollars, and of the lamp, mirror and battery eight dollars.

* Presented to the Medical Society of the District of Columbia, June 11, 1902.

RESOLUTIONS UNANIMOUSLY ADOPTED BY THE
MEDICAL SOCIETY OF THE DISTRICT
OF COLUMBIA, JUNE 11, 1902.

WHEREAS, JOHN W. BULKLEY, M. D., who was graduated in medicine fifty-eight years ago ; LOUIS MACKALL, M. D., who was graduated fifty-one years ago ; and WARWICK EVANS, M. D., and SAMUEL J. RADCLIFFE, M. D., both of whom were graduated fifty years ago in the first class sent out from the Medical Department of the University of Georgetown, and all of whom are now and have been for many years members in good standing in the Medical Society of the District of Columbia ; and

WHEREAS, During the entire period of their connection with the medical profession they have borne themselves in a manner creditable to their honorable calling, and thereby gained and retained the respect and confidence of their professional brethren and of the community at large ; therefore be it

Resolved, That the Medical Society of the District of Columbia tenders to these gentlemen its hearty congratulations on their long and useful careers and on the honors and prosperity to which they have so deservedly attained, and expresses the hope that many years of happiness and usefulness may be in reserve for them.

Resolved, That our eminent colleagues herein named be requested to reduce to writing their medical reminiscences and observations, and their recollections of notable members of the profession whom they have known during their long careers as practicing physicians at the capital of our country, such records to be preserved by the Society as mementoes of those whom the Society, by these resolutions, seeks to lovingly honor as faithful servants worthy of the highest appreciation and esteem.

Memorial Meetings.

DOCTOR T. RITCHIE STONE.

The Medical Society adopted the following resolutions :

WHEREAS, It has pleased Almighty God in His wisdom to remove from our midst our friend and associate DR. T. RITCHIE STONE,

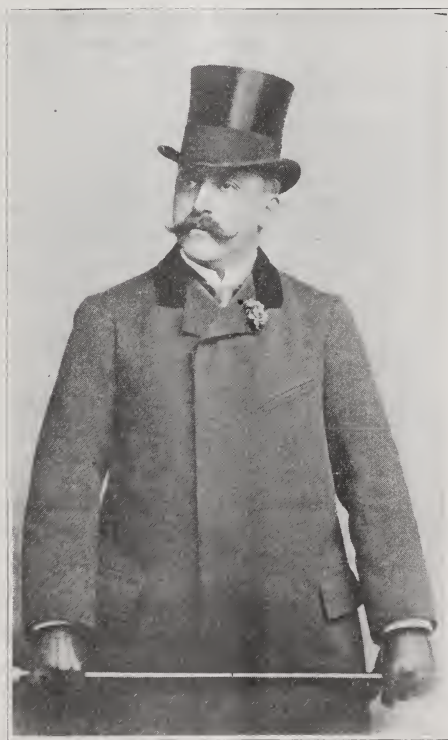
Resolved, That we hereby record our appreciation of the sterling

qualities of our late colleague, who endeared himself not only to members of the profession, but to all with whom he came in contact, by his boundless generosity, his genial nature, his steadfast friendship and his charity to all men.

Resolved, That we deeply lament our loss, and hereby tender the afflicted family our heartfelt sympathy in their bereavement.*

W. H. WILMER,
R. W. BAKER,
JOHN VAN RENSSELAER,
ARTHUR SNYDER,
R. T. HOLDEN,

Committee.



Dr. Wilmer: On Saturday, the 31st of May, the community was shocked and saddened by the sudden death of Doctor T. Ritchie Stone. Forty-five years ago, July 18th, he was born in

* Preamble and resolutions reported by the Memorial Committee and adopted by the Medical Society of the District of Columbia, June 3, 1902.

the house at the corner of Fourteenth and F Streets, the house in which he died. On both sides he came of a long line of strong men—men of giant intellect. His father, Robert King Stone, stood at the head of his profession in this city. He, too, died very suddenly in his fiftieth year. Few men of his age have attained greater professional reputation, few men have attended the bedside of more eminent patients. He was the physician and the friend of Lincoln.

Doctor Stone's mother is the worthy daughter of an illustrious father, Thomas Ritchie. For over half a century she has been identified with all that is best in Washington life, and is widely known as a charming hostess, a brilliant conversationalist and a gentle, Christian woman.

Doctor Stone's early life was spent in his native city, over which the clouds of war were then heavily hanging. At that time he was more interested in the stirring scenes around him than in his books. There was not a tap of the drum to which he did not respond. "Playing soldier" and "playing doctor" were his rival amusements.

His regular school days began under Mr. Charles Young at the "Emerson Institute." In 1873 he went to Old William and Mary College. There, as everywhere else, he won the hearts alike of professors and students. Many are the stories told, even by his teachers, of his fine voice, his humorous pranks and his manly courage. He followed his medical studies at the University of Virginia and at the University of Vermont, where he graduated, after which he traveled extensively in Europe and in the Orient. He was a rare raconteur, and he often charmed his friends with the accounts of his travels.

January 22, 1885, he married Miss Lelia Whitney, of New Orleans, who was noted for her beauty and her charming personality. She, with two children, Lilian and Robert King, survive him.

For three years he practiced his profession successfully in California; but, in 1890, owing to his wife's illness, and his longing for his native city, he returned to practice at his father's old office.

He was a member, and at one time president, of the Clinico-Pathological Society. He was also a professor at the Columbian University Medical School, and he was on the attending staff of the Emergency Hospital.

He loved his profession, but only to use it as a charity. He often said that the noble practice of medicine was too glorious a thing to be bartered; that the alleviation of the sufferings of mankind should be bestowed freely upon all. Therefore his hospital practice was dearer to him than his private work.

But no one can describe his wonderful qualities of heart and mind. A friend writes: "Was there ever a kinder heart; half

so tender, half so true? The world is all the better for having such a man live." He scorned ingratitude as one of the worst of vices. He was ambitious only for his friends, and to serve a friend was his greatest happiness. He was widely known in the profession and out of it, and he was equally widely beloved. What an unique personality was his; his humor was irresistible, and as a companion he was more than charming. Those in the pink dawn of childhood and those in the twilight of life were equally sure of his courteous thoughtfulness. Let all men who honor a conscientious physician, a man of boundless generosity, a friend whose steadfastness was like the Rock of Gibraltar, "wear forever his memory in their hearts."

Dr. I. S. Stone: We should not allow this occasion to pass without a word regarding our friend who has just passed away. The lesson of his life is to me an important one. As the report of the committee says, he had a "genial disposition." He always had a kindly greeting, and a pleasant word for both patient and friend. We may well consider this question, "What makes the successful physician?" What constitutes success? Not scientific attainment alone. Dr. Stone may not have been considered as scientific as some other men, but after all we believe the real test of the physician's success lies in his appreciation by his friends and patients. Had he been merely a man of scientific attainment not many years would pass ere he would be forgotten, but with such characteristics as he possessed he will be remembered by us all while life lasts.

DOCTOR JOSEPH SCHOLL.

WHEREAS, We have heard with sincere regret the announcement of the death of our fellow-member, JOSEPH SCHOLL, who has been identified with the Medical Society of the District of Columbia for thirty-seven years, therefore be it

Resolved, That in his death we have lost an esteemed, accomplished and kind-hearted associate, who was always deeply interested in the welfare of our Society; and be it further

Resolved, That we extend to the surviving members of his family our sympathy and condolence; and that a copy of these resolutions be forwarded to them under the seal of the Society.*

C. W. FRANZONI,

D. S. LAMB,

THOMAS C. SMITH,

Committee.

* Preamble and resolutions adopted by the Medical Society of the District of Columbia, Wednesday, June 11, 1902.

Joseph Scholl was born in Carlsruhe, Germany, March 12, 1823. His early life was spent in Heidelberg and his medical education completed in Tübingen University, from which he graduated in 1850. He was a student surgeon in the war between Prussia and Denmark in 1846, and in the revolution of 1848 was provost marshal of a small town in Germany, which was the ultimate cause of his being required to leave his native country. In 1851 he came to America and located for a short time in Salem, Mass., subsequently removing to Newark, N. J., where he practiced medicine for nine years and became prominent in his profession. There he served one term as coroner, and with others established the first free hospital of that city. In 1861 he came to Washington and made this city his permanent home, identifying himself with many measures for the promotion of the city's welfare. In 1865 he became a member of the Medical Society of the District of Columbia. He was one of the originators and incorporators of the institution now known as the Emergency Hospital.

As a citizen he was greatly respected, and for his professional services he was highly appreciated by many of our old residents. Though the father of ten children, only three survive, a son and two daughters, all of whom are married and reside in this city.

On Friday, June 6, after a brief illness—the immediate cause of death being a hemorrhage resulting from gastric ulcer—he passed away; and on the following Monday, June 9, the ninth anniversary of his wife's death, he was buried in the Congressional Cemetery.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, May 21, 1902.—The President, Dr. S. S. Adams, in the Chair. Over 42 members present.

Drs. Wm. B. Banister and F. P. Reynolds, U. S. A., were elected members by invitation.

Dr. Lamb stated that the Editorial Committee intended publishing a list of the members of the Society in the *WASHINGTON MEDICAL ANNALS*.

The Society ordered that 300 reprints be made.

The Chair appointed Drs. Dowling and R. S. Lamb members of the Committee on Public Health, to fill the vacancies caused by the resignations of Drs. Anne A. Wilson and L. Eliot.

The following cases and specimens were presented:

By Dr. Snyder: "Ligation of External Carotid Arteries for Malignant Growths." Discussed by Dr. Balloch. See page 296.

By Dr. Vaughan: "Sarcoma of knee." Exhibition of patient. Discussed by Drs. Snyder, Neff and Acker. See page 297.

By Dr. S. S. Adams: "Acute Pemphigus." Discussed by Drs. Carmichael, Vale and J. P. Miller. See page 298.

Dr. Joseph T. Howard read the essay for the month, "Medical Evolution." See page 300.

The discussion of Dr. J. Taber Johnson's paper "Neurasthenia," was concluded by Drs. Vale, Rhett and Mary A. Parsons.

Wednesday, May 28, 1902.—Dr. D. S. Lamb, temporary Chairman. Over 36 members present.

Dr. Hooe presented a case and specimen: "Appendicitis."

Dr. Reyburn read the essay for the month. "The causes of Cancer." This essay and his previous paper on "The Failure of the Knife in the Treatment of Cancer," were discussed by Drs. Balloch, Neff, Wood, D. S. Lamb, Behrend, Parsons, J. P. Miller, Keech, F. R. Hagner, Kleinschmidt and Cook. See page 287.

Special Meeting, Tuesday, June 3, 1902, in memory of DR. T. RITCHIE STONE.—The President, Dr. S. S. Adams, in the Chair. Over 18 members present.

Dr. D. W. Prentiss was appointed temporary Secretary.

A committee was appointed to draw up suitable resolutions; Drs. Wilmer, VanRensselaer, Baker, Snyder and Holden. The committee reported and the report and resolutions were unanimously adopted. Drs. Wilmer and I. S. Stone made memorial addresses. See page 313.

Wednesday, June 4, 1902.—Held at the Government Hospital for the Insane, by invitation of the Superintendent, Dr. A. B. Richardson. Over 94 members present.

Under the guidance of Dr. Richardson and the Hospital Staff, the Society inspected the wards, electric apparatus, hydrotherapeutic methods, etc., after which a collation was served.

The members then repaired to the chapel and viewed a pathological exhibit prepared by Dr. Blackburn. The meeting was called to order by the President, Dr. S. S. Adams. The regular order of business was dispensed with. The President invited the members of the Hospital Staff to attend the meetings of the Medical Society at their pleasure.

The paper of the afternoon was read by Dr. Richardson, "The Treatment of Acute Insanity."

Wednesday, June 11, 1902.—The President, Dr. S. S. Adams, in the Chair. Over 25 members present.

Dr. D. S. Lamb, for the Editing Committee, reported that the second number of the ANNALS had been issued and distributed. The committee desired the assistance of members in securing advertisements for the journal, and suggested that it would be well for members, whenever possible, to patronize the advertisers. He turned over to the Society 500 lists of members and 500 copies of the Johnston memorial pamphlet, both having been reprinted from the ANNALS in accordance with instructions from the So-

ciety. The committee requested an appropriation of \$182.57 to enable it to meet the bills incurred in the publication of the ANNALS. The appropriation was granted.

The sum of \$296.00 was appropriated to pay the balance of the bill for printing 400 copies of the transactions for 1901.

The Society adopted appropriate resolutions in regard to Drs. Bulkley, Mackall (Sr.), Evans and Radcliffe, who had practiced medicine over fifty years. See page 312.

The Chair called attention to the death of one of the Society's oldest members, Dr. Joseph Scholl, and appointed Drs. Franzoni, T. C. Smith and D. S. Lamb a committee to prepare suitable resolutions.

The committee reported appropriate resolutions, which were unanimously adopted. See page 315.

The following cases and specimens were presented :

By Dr. D. S. Lamb : 1, "Congenital Disease of the Heart." Discussed by Drs. Acker and S. S. Adams. See page 307.
2, "Typhoid Fever." See page 310.

By Dr. Acker : "Aneurism of Abdominal Aorta." See page 310.

By Dr. V. B. Jackson : "Sarcoma of Fibula." See page 309.

Dr. Balloch, exhibited a skiagram showing congenital absence of 5th metacarpal bone.

Dr. R. S. Lamb exhibited an electric lamp for examining the cavities of the body, etc. See page 311.

The Chair expressed his thanks to the members of the Society for the support which they had given him so far in making the meetings a success, after which the Society adjourned *sine die* for the first session of 1902.

Stated Meeting, Monday, July 7, 1902.—Dr. A. R. Shands, Vice-President, in the Chair. Over 31 members present.

Applications for membership from 56 candidates were referred to the Board of Censors.

The Treasurer's report for the six months ending June 30, 1902, was as follows :

Balance, January 1, 1902,	\$1,270.31
Loan, \$1,000, at interest,	1,000.00
Interest on deposits,	12.20
Credit per resolution of Society, January 6, 1902,	20.02
Assessments collected,	340.01
Initiation fees,	110.00
Six months' interest on loan, \$1,000,	30.00
	<hr/>
	\$2,782.54
Expenditures,	1,224.64
	<hr/>
Balance, July 1, 1902,	\$1,557.90

The following letter from President Adams was read by the Secretary :

WASHINGTON, D. C., *July 2, 1902.*

TO THE MEMBERS OF THE MEDICAL SOCIETY :

At the time of the stated meeting of the Society I expect to be in New Hampshire, enjoying the cool breezes, and will certainly have a thought of you on that night.

I take this means of again appealing to you to amend the Constitution so as to reduce the initiation fee to \$5. I do this for two reasons : first, because a great many men are kept out of the Society by the present initiation fee, and, second, because it does not seem just that, after a physician has paid \$10 for a license to practice in the District of Columbia, he should be compelled to pay another \$10 in order to affiliate with the principal scientific body in the city. From the number of applications to be presented and others that will be secured before the end of the year, I do not think that there should be any fear that the treasury will be depleted.

With great respect, I am, very truly,

SAMUEL S. ADAMS, *President.*

Dr. J. Dudley Morgan's motion to amend the Constitution so as to do away with the initiation fee was then considered.

Dr. Morgan spoke in favor of his motion. New members were obliged to pay an entrance fee of \$10, in addition to the \$10 required by the District Board of Examiners. This was not the case when the provision was inserted in the Constitution, for the Board was not in existence at that time. Many young physicians who would make desirable members of the Society were prevented from joining because they found difficulty in raising the amount of the initiation fee. Societies and clubs which charged an entrance fee usually possessed real estate or other tangible property in which applicants became part owners on admission to membership. This Society, however, had nothing of this kind to offer. The influence of the Society, legislative, professional and otherwise, would be increased by an augmented membership, and the best way to add new members was to reduce the initiation fee. The annual dues also should be reduced to \$4, with subscription to the ANNALS thrown in. This amount was sufficient, as was shown by the prosperity of other societies whose annual dues were \$4.

Dr. Cook asked Dr. Morgan whether he knew that the present applicants had been informed that the initiation fee would be reduced.

Dr. Morgan replied that he had been so informed.

Dr. Mayfield favored the motion. He referred to other societies which, in his opinion, gave more in return for membership fees than this Society does.

Dr. Balloch suggested that the heavy expenses of the current year were partly due to the publication of the transactions of 1901.

Dr. Jackson said that three of the ten physicians whom he had asked to join the Society had inquired as to the initiation fee, and he had assured them that there was every reason to believe that it would be reduced. This he did upon official authority. He was not in favor of reducing the fee if it would cripple the Society financially; otherwise he believed that the fee should be made \$5. He asked the Treasurer for information upon this point.

Dr. Franzoni was opposed to any reduction of the fee, mainly for the following reasons: The financial condition of the Society would not warrant a reduction; eighteen to twenty new members, on the average, were being added to the rolls annually, which indicated a wholesome and substantial growth. It was not advisable to cause an increased growth of the mushroom variety by adding members who came in readily, but who were not likely to keep up their membership. The amount of the initiation fee had not in the past prevented the wholesome growth referred to, nor had candidates of 80 years claimed that they could not raise the \$10 fee.

Dr. T. C. Smith, favored a reduction to \$5, or less. He believed that nine-tenths of the members favored this step. It was a necessity because the loss in membership, by death and otherwise, was now greater than the increase. Dr. Busey, at whose suggestion the fee was fixed at \$10 when the Constitution was revised, had subsequently expressed regret that it had been made over \$5. To increase the membership was to increase the interest in the Society and its meetings and to add to its prestige and influence for good.

Dr. Acker favored reduction. He endorsed the arguments which had been presented in favor of the motion.

Dr. McCormick said that the candidates whose names had just been read would have to pay the \$10 fee anyway, as the Society could not make an *ex post facto* law.

Dr. Cook said that if the Society should decide not to reduce the entrance fee these candidates should be notified of the fact, so that they could withdraw their applications if they desired to do so.

Dr. E. L. Morgan thought that if the initiation fee was reduced the annual dues would have to be raised proportionately, and it was a question which of the two was preferable. He believed that the expenses of the Society were much larger than need be, and that greater care should be exercised in authorizing expenditures.

Dr. Wood said that while he had given candidates no assurance that the fee would be reduced, he had said that this would probably be done. Three of them had refused to join unless the fee was reduced.

Dr. Reyburn was opposed to the entire abolition of the entrance fee, but thought that it should be made less than \$10.

Dr. J. D. Morgan's motion to abolish the initiation fee altogether was lost. The vote stood 8 affirmative, 22 negative.

Dr. Acker's motion to alter the Constitution so as to reduce the entrance fee to \$5 was then considered.

Dr. Acker spoke in favor of his motion.

Dr. Franzoni opposed the motion. The condition of the treasury did not warrant such a step, and the Society would soon begin to run into debt. The Society needed a regular but permanent increase in membership, not a sudden and more or less temporary increase in numbers. Candidates who were attracted by a small initiation fee would object even more strongly to the payment of \$4 annually as dues.

Dr. Reyburn believed that a reduction of the fee to \$5 would benefit the Society in every way.

Dr. Cook said that while he would like to see every reputable regular physician in the District a member of this Society, he did not believe that its financial condition would warrant a reduction of the entrance fee at this time. He regretted that any assurance had been given to prospective candidates upon the subject. The Treasurer had stated from an official standpoint that the step was inadvisable, and his opinion should carry much weight. He has also stated that the loss of members was comparatively slight, and that the membership was steadily increasing. The expenses of the Society were considerable, and enough revenue must be provided to enable it to meet its obligations. Hence, he believed that the entrance fee should not be reduced at this time.

Dr. Kober favored reduction of the fee. Many of the objections thereto had been overstated, and the expenses of the Society had unwittingly been made to appear larger than they really were. No money had been misspent. The fact that fifty-six candidates had applied for admission when they heard that the initiation fee would in all probability be reduced to \$5 was a powerful argument in favor of taking the proposed step. They must have had a very good reason for not applying before.

Dr. F. E. Gibson said that he had given no assurance to candidates upon the subject, but had told those whom he had seen that the fee would probably be reduced at the next stated meeting.

Dr. Chappell spoke strongly in favor of the motion. The question was not as to the amount of money which the Society could collect as entrance fees, but as to how much good it could do for its members and the community. When the new members had learned of the benefits to be derived from membership they would by no means object to the payment of the annual dues. The welfare and beneficial influence of the Society would be increased in every way by the proposed reduction.

Dr. E. L. Morgan favored the motion.

The motion was carried ; 24 affirmative, 9 negative.

Dr. J. D. Morgan explained that he had voted against the motion because he believed that the entrance fee should be abolished altogether.

Editorial.

ADVERTISEMENTS AND SUBSCRIPTIONS.

The Editorial Committee would be pleased to have the members of the Society interest themselves (as some have already done) in procuring advertisements and subscriptions. Dr. Jackson has charge of advertisements, and will furnish any desired information. Dr. Wells has charge of subscriptions ; the rate is one dollar a year, postage paid.

The Committee would especially bespeak for the advertisers the patronage of members, other things, of course, being equal.

We are requested to inform our readers that the Mississippi Valley Medical Association will hold its 28th annual meeting, October 15 to 17, 1902, at Kansas City, Mo.

The July examination of physicians for registration in the District of Columbia, resulted favorably for the following candidates :

94.62 Columbian University, D. C. ; 91.40 University of Pennsylvania ; 89.68 Columbian University, D. C. ; 89.18 Columbian University, D. C. ; 89.15 Columbian University, D. C. ; 89.12 Columbian University, D. C. ; 88.90 Howard University, D. C. ; 87.28 Howard University, D. C. ; 87.03 Columbian University, D. C. ; 86.96 Columbian University, D. C. ; 86.84 National University, D. C. ; 86.53 Columbia University, N. Y. ; 86.27 Hahnemann College, Chicago ; 86.12 Columbian University, D. C. ; 85.78 Columbian University, D. C. ; 84.96 Columbia University, N. Y. ; 84.34 National University, D. C. ; 84.18 Columbian University, D. C. ; 84. Columbian University, D. C. ; 83.87 National University, D. C. ; 82.46 Columbian University, D. C. ; 81.06

National University, D. C. ; 80.84 Columbian University, D. C. ; 78.90 University of South ; 78.59 Columbian University, D. C. ; 78.21 Howard University, D. C.

The following letter was recently forwarded to the District Commissioners :

In view of the fact that the bill providing for the medical inspection of schools failed to pass Congress, and realizing the necessity for such inspection in order to prevent the spread of contagious diseases in the public schools and thence through the community, as shown by the health reports of Boston, New York, Chicago and Philadelphia ; and believing that the system should be inaugurated at the beginning of the next school term in order that its benefits may be realized without delay, we, the undersigned practicing physicians of the District, respectfully offer our services without remuneration for the coming school year ; and we are willing to undergo an examination by a board, and serve under instructions of the health officer and according to rules formulated by him and approved by the Board of Education and yourselves.

The letter was signed by the following : Drs. R. S. Lamb, William D. Johnston, Elliott C. Prentiss, D. W. Prentiss, E. G. Siebert, James Stuart, A. Francis Foye, John R. Francis, Samuel H. Greene, Jr. ; Thomas Dowling, Frank E. Gibson, J. B. Nichols, J. Lewis Riggles, William C. Gwynn, M. O. Dumas, Thomas S. D. Grasty, Wallace Johnson, George B. Heinecke, A. Barnes Hooe, Benjamin F. Gibbs, Samuel G. Watkins, Theodore Y. Hull, Julia R. Hall, Martha Clark Burritt, E. L. Maddren, Robert W. Brown, Mary Parsons, R. A. Pyles, G. R. Lee Cole, L. S. Savage, J. W. Chappell, Edgar P. Copeland, F. A. Swartwout, John W. Mitchell, Howard Fisher, N. D. Graham, C. S. Keyser, Edwin S. Lothrop, Edward F. Pickford, J. R. Wilder, E. D. Perkins, J. Ramsburgh, Jesse Shoup, N. P. Barnes, H. T. A. Lemon, John T. Cole, A. W. Boswell, John A. O'Donoghue, Albert Ridgley.

The Commissioners decided that they could not accept this offer because of an Act of Congress of 1898, which provided that "Hereafter the Commissioners of the District of Columbia shall not accept volunteer service for the government of the District of Columbia, or employ personal services in excess of that authorized

by law, except in cases of sudden emergency involving the loss of human life or the destruction of property."

We acknowledge receipt in exchange of the following medical journals: *Providence Medical Journal*; *Albany Medical Annals*; *Buffalo Medical Journal*; *New York State Medical Journal*; *Louisville Medical Journal*; *St. Louis Medical and Surgical Journal*; *Pacific Medical Journal*.

We would request that all exchanges be addressed "WASHINGTON MEDICAL ANNALS," 618 F Street, N. W., Washington, D. C.

Medical Miscellany.

Medical School of the Columbian University.—The fact that the system of instruction which has been in vogue in the Columbian University Medical School for eighty-two years is good is well evidenced by the unusual success and prominence of her graduates in all parts of the country.

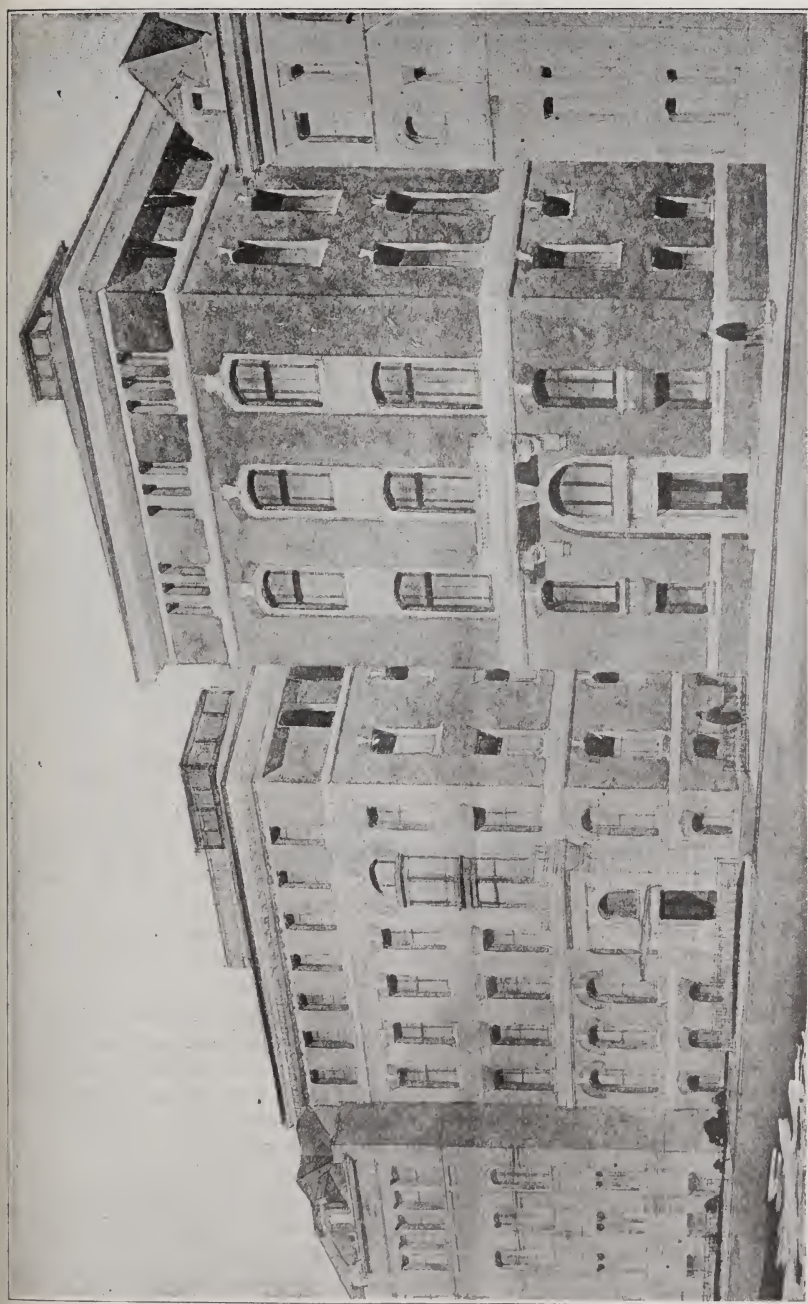
Realizing the peculiar advantages of Washington for medical study, if the courses are so arranged that the student can avail himself of the many facilities for theoretical and practical work which Washington offers, the Columbian Medical School is erecting new and commodious buildings, both for college and hospital. These will be ready for the year 1902-1903.

Not only is the hospital ideal in being under the control of the faculty, but also in being in one of the most convenient locations in the City of Washington, near the corner of Fourteenth and H Streets, N. W.

Before the Examining Boards of the Army, the Navy and the Marine Hospital Service, Columbian graduates have always ranked very high, receiving the commendation of the examiners.

With her improved facilities, the Columbian will use every effort to advance medical education in the District of Columbia.

The following changes and additions have been made in the Medical Faculty: Dr. Walter Reed, U. S. A., has been elected to the Chair of Pathology; Dr. Sterling Ruffin, to the vacancy in the Chair of Practice of Medicine; Dr. Thomas Claytor, to the Chair of Materia Medica and Therapeutics; Dr. James Carroll, as Associate Professor of Pathology and Bacteriology.



MEDICAL SCHOOL AND HOSPITAL OF COLUMBIAN UNIVERSITY.

Eastern Dispensary and Casualty Hospital, Washington.—

The work accomplished for the indigent sick and injured, and the emergency cases of others than the indigent, in east Washington and a portion of the northwest, is shown by the following report. In the dispensary there were 1,951 new cases treated; total visits of patients, 6,053; revisits, 4,005; operations in the dispensary, 169; prescriptions compounded, 6,743. The casualty work shows 1,295 emergency cases, embracing 625 surgical operations. There were only eight deaths during the year. The hospital and dispensary is located at 217 Delaware Avenue, N. E., within a short distance of the Capitol, and fills a long-felt want in that section. The territory from which the various cases come is a large one, extending to Anacostia, Ivy City and other remote places. The hospital is convenient to the Capitol, from which place cases are frequently brought, and also to the Baltimore & Ohio Railroad and Pennsylvania Railroad tracks, where many accidents occur, and the cases are brought to this hospital for treatment. Recently there was added to the control of this institution a Ladies' Board of Management, with the following officers: President, Miss Estelle Nichols; Vice-Presidents, Mrs. J. W. Babson, Mrs. Thos. G. Jones, Mrs. W. D. McFarland, Mrs. W. F. Gatchell and Miss Mabel Towner; Recording Secretary, Miss Jeannette Medford; Treasurer, Mrs. L. K. Beatty; Corresponding Secretary, Miss Harriett B. Platt.

During the past year the building, which was erected in 1800, has been painted and renovated and a new telephone put in. Most of these improvements have been made by the ladies of the institution from money raised by them.

C. R. DUFOUR.

Sibley Memorial Hospital, Washington, is the Nurse Training Department of the National Training School for Missionaries and Deaconesses, supported and controlled by the Woman's Home Missionary Society of the Methodist Episcopal Church. It is non-sectarian in its work for the alleviation of human suffering. Patients of all creeds and nationalities are its beneficiaries. Twenty-five young women, from all parts of the United States, are students in the hospital. It was the first institution to send out nurses for District work among the sick poor, and during the year ending June 30, 1902, they made 3,004 calls. The work of the hospital for the year ending June 30, 1902, is as follows: Number of patients admitted, 591; free patients, 213; surgical cases, 274; medical cases, 317; births, 56; deaths, 33. Number of visits by the nurses to the Eastern Dispensary, 152.

The hospital is steadily growing in favor, and the managers are oftentimes unable to furnish accommodations to applicants for admission.

D. B. STREET.

Health Department.—**TYPHOID FEVER IN THE DISTRICT OF COLUMBIA.**—The following is a brief statement relative to typhoid fever in the District of Columbia during the spring and summer months of the current year. All figures relative to the number of deaths which have occurred are based upon returns received by the Health Department prior to September 10, 1902.

The law requiring cases of typhoid fever to be reported to the Health Department was enacted February 4, 1902. As soon thereafter as possible circular letters were sent to every registered physician, inviting his attention to the requirements of this law and enclosing blank forms for reports. Between the time when the law may be said to have become practically operative, about the end of February, and the 31st of August last, 460 cases were reported, of which 105 have died. For the satisfactory study of either the prevalence or the type of the disease it is necessary to discard the earlier returns, as later developments have tended to show that, in so far as the number of cases was concerned, they were by no means complete.

The fatality of the current outbreak of typhoid fever is best indicated by the fact that of the 44 cases reported during the month of June, 11, equal to 25 per cent., ended fatally. It may be presumed, of course, that all the cases reported during June which have not yet died have progressed so far toward recovery as to render a fatal result improbable, and the above figure indicates, therefore, the actual fatality with reasonable accuracy. The figures for July and August are suggestive only, as some of the cases reported during these months have not yet passed the danger point. Of the 71 cases reported in July, 22 have died, and of the 328 cases reported in August, fatal terminations have been reported in 38.

Total deaths from typhoid fever, etc., during July and August, 1898 to 1902, inclusive.

Disease.	Years.				
	1898.	1899.	1900.	1901.	1902.
Typhoid fever.....	46	47	61	42	60
Typho-malarial fever (so-called).....	4	2	1	0	0
Malarial fever.....	13	7	17	9	10

As at no previous time has it been obligatory to report cases of typhoid fever no accurate figures are at hand by which to determine the relative prevalence of the disease at different periods except such as exist in the records of deaths. The preceding statement shows the number of deaths which have been reported during the months of July and August in each of

the past five years. The numbers of deaths reported during the corresponding periods from malarial fevers and from so-called typho-malarial fever have been added, as they help to throw light on the general situation.

On the receipt of a report of a case of typhoid fever the Health Department endeavors to ascertain as soon as possible the duration of the illness of the patient, the sources of the milk and the water supplies, the possible absence of the patient from the city within the incubation period of the disease, and other data tending to throw light on the origin of the case. The results of such inquiries are studied and an effort is made to assign the case with as great accuracy as may be possible to some particular cause. As the result of such investigations 50 of the cases reported during July and August were charged to various summer resorts and country boarding houses outside of the District of Columbia. As against these, however, we must remember that some persons have contracted typhoid fever in the District of Columbia and have developed it elsewhere, but, as there is no accurate record of such cases and no way of securing such a record, no definite allowance can be made for this factor in the local situation.

Of the cases contracted in the District of Columbia 6 are believed to have been infected through milk supplied by a Maryland dairyman, on whose farm there was a case of typhoid fever, and 15 patients were infected through milk which came from a dairy farm located in the District, on which typhoid fever existed. Of the remaining local cases 28 were due to direct exposure to patients suffering from typhoid fever.

After deducting all cases believed to have been contracted outside the District and all cases contracted within the District from milk infection or from direct exposure to typhoid fever, there remain 359 cases apparently contracted in the District, but the origin of which is more or less obscure. These cases were scattered throughout the entire District of Columbia. No more definite information as to location is given because, in the absence of equally definite information relative to the distribution of the population, no accurate conclusions can be drawn. The water supply of the premises on which these cases occurred was as follows :

Potomac River water,	283
Well water,	43
Spring water,	4
Potomac River water and well water,	17
Potomac River water and spring water,	4
Potomac River water and melted ice,	2
Well water and spring water,	6

The fact that certain premises have a given water supply is, of course, not conclusive evidence that such cases of typhoid fever

as occur in said premises were derived from that water supply, although in the absence of any other discoverable cause it is sufficient to raise suspicion that such was the case.

A study of the age and sex of the patients who have suffered from typhoid fever on such premises throws some light on the question of origin. The appended table showing the age and sex of patients who have suffered from typhoid fever on premises supplied by Potomac River water indicates a susceptibility to attack practically equal in males and females. On the other hand, the table showing the age and sex of patients who have developed typhoid fever on premises supplied wholly or in part from spring or well water indicates a much greater prevalence of the disease among males, particularly during the period of life when men are most apt to be wage earners, away from home during working hours and using drinking water other than the home supply. There is a possible error, of course, in suggesting the above conclusion, inasmuch as the number of males and the number of females living on the premises mentioned are not known, but there is no presumption that the distribution of the occupants by sex was in any way different in the two classes of residents. The cases in which melted ice has formed a part of the source of drinking water have been too few to justify any conclusions. Among the cases infected through milk there was a preponderance of females, 14 females and 7 males, the cause of which is not apparent. The preponderance of female patients in cases derived from direct exposure to typhoid fever, 19 to 9, is probably explainable by the fact that females have been more exposed to infection from this source owing to the greater extent of the services in the sick room usually rendered by females.

Age and sex of typhoid fever patients living on premises supplied solely by Potomac River water.

Age.	Sex.		
	Male.	Female.	Total.
Under 1 year	0	1	1
Between 1 and 5 years.....	9	10	19
Between 5 and 10 years.....	17	20	37
Between 10 and 20 years.....	54	38	92
Between 20 and 30 years.....	38	45	83
Between 30 and 40 years.....	18	19	37
Between 40 and 50 years.....	1	4	5
Between 50 and 60 years.....	5	2	7
Between 60 and 70 years.....	1	1	2
Total.....	143	140	283

Age and sex of typhoid fever patients living on premises supplied solely or in part by spring or well water.

Age.	Sex.		
	Male.	Female.	Total.
Under 1 year	0	0	0
Between 1 and 5 years.....	2	2	4
Between 5 and 10 years.....	4	6	10
Between 10 and 20 years.. ..	15	11	26
Between 20 and 30 years.....	10	7	17
Between 30 and 40 years.....	9	4	13
Between 40 and 50 years.....	3	0	3
Between 50 and 60 years.....	1	0	1
Total.....	44	30	74

W. C. WOODWARD.

WASHINGTON MEDICAL ANNALS

PERSONALITY IN MEDICAL EDUCATION.*

By EDWARD A. BALLOCH, A. M., M. D.,

Washington, D. C.

At this season of the year, when medical schools are opening and the voice of the student is heard in the land, a few thoughts on the general subject of medical education may not be out of place. The relation of teacher and pupil is a particularly close one. Coming, as he does, into contact with his pupil at the formative and receptive era of the latter's life, the true teacher makes an impress on the mind and character of the pupil which is never eradicated. One may forget the friends of his youth, and even the ties of kinship may grow lax, but does one ever really forget the teachers of his early days? I venture to say that each of us can recall one or more men who taught him and, perhaps unconsciously to both, aided in forming his character.

One of the most beautiful of the orations of Cicero is that in behalf of his old master, the Poet Archias, the burden of his argument being that he would be recreant did he not exert his powers of oratory in behalf of the man who, more than any one else, had made them possible. It may be truly said of the great teacher as of the poet, that he is born, not made, and that he is second to none in his influence for good. What is the element common to all noted teachers which makes them successful? It seems to me that it is personality. There is something forceful and individual in each that makes its impress upon the minds of others. Many of us are teachers, and I am quite sure that the problem of how best to get into contact with those we teach causes us many hours of thought. We do not want to talk *to* our pupils or *at* them, but *with* them. To do this, it seems to me, we must study the needs of those we teach and try to adapt ourselves to those needs. We

* Read before the Medical Society of the District of Columbia, October 1, 1902.

should be particularly careful not to go over their heads and not to take too much for granted.

The methods of medical teaching are changing. Less stress is laid on the didactic lecture and more on the familiar clinical talk. Whether or not this is a change for the better remains to be seen. There is certainly a place for the didactic lecture in summing up, discussing and correlating the results of clinical observation. In a general way it would seem that a judicious combination of the two would be the ideal way of teaching medicine.

In olden times a youth wishing to learn a trade entered himself with a master workman as an apprentice. For many years he toiled without pay ; proceeding from the rudiments to the intricacies of his art, and unconsciously absorbing the spirit and manner of his master. His apprenticeship finished, he became a journeyman, and spent his "wanderjahr" in going from city to city, working in the shops of those famed as masters in the art of his choice. In this way he was able to compare his own methods with those of others ; to adopt their excellencies and avoid their defects. By these means he formed for himself a style having in it the elements of thorough training, observation and comparison, so that when, in his own turn, he set up as a master, all his work bore the impress of himself. Yet, in spite of this, it was all unconsciously saturated with the spirit and teachings of the masters under whom he had served. The final result was that in those days handiwork was art. The master mason wrought miracles in stone ; the master builder considered that beauty was of as much importance as utility, and the painters created those master pieces which the artist of to-day goes thousands of miles to see and study. What is the secret of the permanence of this work ? Is it not the personal element in it ? When a man puts *himself* into his work it is likely to be lasting.

As in the arts, so it was formerly in medicine. The would-be physician entered the office of an established practitioner to spend his years of apprenticeship. He rode and talked with his master, assisting him in his work, learning his ways and unconsciously absorbing his methods and even his manner. One or two winters were spent at a medical school, acquiring the broad, underlying principles of our art, but the association with his preceptor was kept up during the rest of the year. If exceptionally fortunate, he was finished off by a year or two of study abroad, but, at all

events, he entered upon the practice of his profession with a sound, practical training, fully able to cope with its emergencies. There were brave men before Agamemnon, and there have been good physicians before our time, educated in the manner I have indicated. Some of us can call to mind such men, and will, I am sure, bear willing testimony to their skill and ability. Other times, other manners. How is it nowadays? We have no time for this leisurely progress toward perfection. In the arts we have huge factories turning out their product, one piece as much like another as machinery can make it. In medicine, we see the tendency toward huge schools, each with an annual product measured by hundreds. Is it not inevitable that one should be pretty much like another in this wholesale production? There is no room for individuality. Instruction must be served out wholesale. Teacher and pupil may never meet. It is like serving the meals in some great public institutions: so many pounds of beef, so many bushels of potatoes and so many loaves of bread are cooked each day and served to all the inmates alike, regardless of individual tastes or distastes. It is nourishing after a fashion, but hardly palatable. So it is with this wholesale medical instruction. So much anatomy, so much surgery and so much chemistry are served out each day for all alike. If the individual can assimilate any of it, well and good; if not, so much the worse for his mental digestion. There is not and cannot be any attempt to consult individual needs. The result is uniformity of product. I do not wish to be understood as implying that the product is not good, for it is surprisingly so, when the method of production is considered. Here and there one may rise above the level, but in such cases investigation will usually show that such an one has had the advantage of personal association with some master of our art and the benefit of his advice and training.

In this connection the following remarks by Dr. J. H. Carstens in a recent article are so pertinent that I cannot refrain from quoting them. Dr. Carstens says:

"No one can become a modern surgeon by going to a post-graduate school and seeing a surgeon operate at a distance of fifty or a hundred feet. In order to become a modern surgeon he must work directly with some modern surgeon, *he must assist him, he must be with him day after day, month after month—yes, even year after year, but certainly not less than a year.* Then he will probably

appreciate the difficulties of diagnosis, the difficulty of deciding upon the right kind of operation, the difficulty of selecting the propitious time and moment for each individual patient. Then he will acquire some of the fine points in the technic, the minutiae, the attention or non-attention to which small details brings success or failure in an operation." (*Medical News*, 1902, lxxx, p. 25.)

Here, it seems to me, is the opportunity of the small school. In such a school teacher and pupil come into more intimate contact, and there is a chance to study individual needs. That the larger schools realize this is shown by two facts. In the first place, the best of these schools are no longer striving for mere numbers in the matter of students. There is an effort to secure as students only those who are qualified by previous education to appreciate medicine as a science. This must result necessarily in a small but extremely intelligent student body. In the second place, the practical teaching in nearly all the larger schools is now done by means of instruction given to small sections. In other words, the unit of teaching, instead of being the individual or the class, is now the section. This is but a development of the old idea of a master and a few pupils. Then the student was with his master constantly, visiting and examining his cases with him and afterward discussing them with him. Now, each section goes to the bedside with its instructor, and the cases are similarly examined and discussed. Thus pupils and teacher are brought into that close and familiar contact so essential to successful teaching. In other words, it exemplifies the fact that the personality of the teacher is the main element in the education of the pupil. To this element, I think, may be attributed much of the success of foreign instruction. A master has his laboratory or his clinic, and the pupils, drawn by his fame in some particular line, are brought into close and intimate contact with him. He directs and supervises all their work, criticises it, and leads the pupil on to higher fields. Who of us cannot recall some member of the faculty in his student days who was his pattern and exemplar; whose good opinion he coveted; whose friendship he endeavored to cultivate, and whom he made his model as a man and as a physician? We carry with us into after life the memory of such men, and it helps and inspires us in our life work. Our late lamented president, Dr. Busey, in his interesting "Personal Reminiscences," has put on record his testimony on this point in

the chapter in which he tells of his experiences as a private pupil of Geo. B. Wood. If any one doubts that Wood profoundly influenced Dr. Busey's after professional life, let him read his description of Wood and his manner. It might almost answer for a pen-portrait of Busey himself.

Another element in successful teaching must be a love for and an intimate knowledge of the subject taught. Students are quick to detect shams and are keen diagnosticians of perfunctory work. The instructor who is single-hearted in his devotion to his work quickly commands respect because he deserves it. The best example of this type of man in the English speaking medical world is John Hunter. Here was a man of lowly birth and meager educational advantages, who, by his own unaided efforts and by sheer force of hard work and will power, rose to the highest plane of medical authority. His success came to him justly, and lay in his love for his work and his enormous capacity for performing it. He was wrapped up in his work, and begrudged the time expended in earning the money necessary for his living expenses. A large part of his earnings went toward improving his museum, so that, despite the fact that before his death his annual income was six thousand pounds, he died a poor man. His customary hour for rising was four o'clock, and the ensuing four or five hours were spent in the dissecting room. Five hours of sleep sufficed him, the remainder of the day being spent in work. It would naturally be supposed that such a man would profoundly influence those associated with him, and when we read that among his pupils were such men as Edward Jenner, Abernethy, Sir Astley Cooper and Philip Syng Physick, the father of American surgery, we are not surprised to find them men of marked individuality and originality. They were, one and all, proud of their master and regarded him with reverence. When we recall the fact that, at that time, the pupil in medicine resided in the house of his preceptor and was apprenticed to him for five years, we can realize the close intimacy that must have existed between Hunter and those so fortunate as to be his pupils.

Of these pupils the favorite was probably Edward Jenner. Doubtless to many of us it has been a matter of surprise that so great a discovery as that of the efficacy of vaccination should have been made by an obscure country practitioner. This surprise is lessened when we learn that he was constantly under the influence

of Hunter. Even before the end of Jenner's five years of apprenticeship Hunter wanted him to become his assistant and to join with him in establishing a school of natural history on a scale before unknown. Jenner, however, preferring the quiet life of the country, turned a deaf ear to these very flattering offers. Even then he was not free from the influence of Hunter, for the latter deluged him with letters suggesting new experiments which he besought Jenner to carry out for him. The correspondence between them would fill several volumes. He was always asking Jenner for material and for observations on the habits of birds, beasts and fishes. Some quotations from Hunter's letters are the following :

"Have you any large trees of different kinds that you can make free with? If you have, I will put you upon a set of experiments with regard to the heat of vegetables." Again he says, referring to some observations upon the temperature of the hedgehog : " I think your solution just ; but why think ? Why not try the experiment ? Try the heat ; cut off a leg at the same place ; cut off the head and expose the heart, and let me know the result."

Indeed, experiments were Hunter's meat and drink. Owing to his defective education he lacked a taste for reading, so that he was often ignorant of what other men had accomplished and consequently did work which had already been done by others without his knowledge.

Is it a matter for wonder that, with such a master, and himself so apt a pupil, Jenner was observant to the highest degree, and that he did not fear to test his observations by the touchstone of experiment? It becomes no longer a matter of surprise that he made the discovery which immortalized his name. Is it too much to say that to Hunter, at least indirectly, we owe the discovery of vaccination? It is a striking example of the influence of personality in medical teaching. Jenner cherished the utmost love for his master, and always referred to him as the "dear man."

Doubtless a search of the history of medicine would show many instances of a like nature, but enough has been said, I think, to show that the personality of the teacher is a powerful factor in the development of the pupil, and that the teacher is successful almost exactly in the proportion that he possesses this faculty. Also it is apparent that our schools of medicine to be truly effec-

tive must imitate this close association of master and pupil. The most feasible way of doing this seems to be by making the section instead of the class the unit of teaching. This means a large teaching body, probably, the gradual elimination of the smaller schools. That we have too many small and weak medical schools in America is a proposition that needs no argument. This is the age of concentration and the combining of similar interests in order to lessen the expense of management and unify the business. If the same tendency were shown in medical education it would be better for all concerned. Our own city is a fair illustration.

If, instead of four schools, we could have one strong institution with a control of all the clinical material we should be in a much better position in the medical world than we are to-day.

We might take a lesson from the general institutions of learning and have two grades of schools. The lower grade could thoroughly train students in the so-called primary branches, which can be almost as well taught in a small as in a large school. The last two years might then be spent in schools in the large cities, organized solely for clinical instruction and with faculties large enough to ensure thorough instruction to small sections. The post-graduate schools in a way supply this need, but their advantages seem now to be sought mostly by those who have been some years in practice and feel the need of instruction in some special branch of medicine. The student in his first two years needs no clinical instruction, is indeed better off without it. Let him devote his time to anatomy, physiology and the other studies usually assigned to these years. Whether his future work shall be easy or difficult will depend largely on the thoroughness with which he has mastered these branches. Let him remember that all through his professional life he will be dealing with the problems of surgery, obstetrics and practice, but that never again will he have the opportunity to master anatomy, physiology and the other underlying branches of his art.

Of what advantage is it to a first-year student to witness an operation for appendicitis when he knows nothing about the appendix or its location? What benefit will he get from a clinical lecture on diseases of the heart when he is ignorant of the structure of the organ involved?

It is like witnessing a play given in a foreign language; one may appreciate the spectacle and catch the drift of the action, but

he cannot enjoy it thoroughly and loses the finer points which give life to the whole. The third and fourth years should be largely clinical and special attention should be given to pathology and bacteriology. The latter is a growing science. One need be neither a prophet nor the son of a prophet to foresee that the coming triumphs in medicine are to be in the domain of the prevention of disease, and the key to preventive medicine is bacteriology. The fourth year should be largely one of training for active professional work, and should be, in my judgment, almost entirely clinical. It should, so far as possible, foreshadow the years that are to come. As the student studiously neglected clinical work in his first two years, so let him cultivate it now. The embryo practitioner should be taught self-reliance by being given entire charge of medical, surgical and obstetric cases, under the watchful supervision of teachers and demonstrators, who should be in personal and intimate contact with each student. He should learn to know disease as it is in the patient and not as it is described in the books. Four years spent in this way ought to well equip a student for his life work, but, if time and money permit, they may profitably be supplemented by a year or two of study and observation in other medical centers, at home or abroad.

In conclusion permit me to digress somewhat to allude to a matter which, while not strictly pertinent to my theme, is yet of interest to us all.

The growing importance of Washington as a center for higher education is everywhere recognized. One need only allude to the Catholic University, the proposed Methodist University and the Carnegie Institution as examples of this tendency.

Its numerous laboratories, splendid general and special libraries and unrivaled facilities for research work must more and more attract scholars and students. With this tendency in the general educational field, why may we not hope for something of the kind in the more restricted domain of medicine? Is there any reason why we cannot have here a hospital and medical school of the very first class, sufficiently well endowed to enable it to command the best medical talent in the land, irrespective of location? Such an institution should be thoroughly national in character and absolutely independent of government or municipal aid, which so often paralyzes medical institutions. The aim should be to make such a foundation absolutely the best in the world. As a medical

school, to be successful, must be a vital part of a university, such a plant should be under the auspices of one of our well established institutions of learning. Such a project would take money, and plenty of it; but it is the belief of the writer that sooner or later this dream will be realized, and that the capital of the richest nation in the world will have a plant for medical education which shall be unrivaled in its scope, national in its character, and the recognized fountain head of medicine in America.

DISCUSSION.

Dr. J. Taber Johnson, being asked to open the discussion, said that he had not come prepared to make any remarks. The paper was an admirable one, and it presented many points which deserved thought and consideration. The best method of teaching medicine was as yet undetermined, but he heartily endorsed Dr. Balloch's suggestions. The college whose teachers came most in contact with the students would turn out the best physicians. In large schools like Bellevue, where each graduating class was composed of hundreds of students, no contact with the faculty was possible; the attention which was paid to lectures also was less close than in classes made up of a smaller number of men. Small sections were best for both theoretical and clinical teaching. The suggestions made by Dr. Balloch were being carried out in many places. Here we were not much troubled by classes of great size; but the time might come when this might demand attention.

Histology and pathology, including bacteriology, formed the foundation of medical science. As a member of the District of Columbia Examining Board he found that physicians who had long been graduated had especial difficulty in passing in these branches; they had not had the advantage of modern teaching. He hoped that the dream of the essayist might be realized, and that there might be founded here a national medical school of unequalled standing. The city possessed every advantage for the success of such an institution.

Dr. D. S. Lamb said that Dr. Balloch's theme had been well stated, and well sustained by Dr. Johnson. That the personal element in teaching was a most important factor in success had been observed by all who had had experience in this line of work. Hence the success of the graduates of the smaller schools before examining boards; it equaled and often surpassed that of graduates of larger medical colleges, and was largely due to the personal influence of the teachers. In this city there were exceptional advantages in this line, and students who appreciated and used them had exceptional opportunities to learn. He questioned, however, whether there would ever be a medical school here equal to the greatest elsewhere. It was true that the greatest schools

abroad were situated in capital cities ; but this was not the case in this country, and we could hardly expect to reach the eminence of the great institutions of cities like Boston, New York, Philadelphia, etc. Still, much could be done in the way of improving existing medical institutions in this city.

Dr. Neff said he had listened with interest and pleasure to Dr. Balloch's admirable paper, and was sure that every one who had had any experience in medical teaching would cordially endorse his views. The suggestion in the last paragraph was one that appealed most forcibly to all. There was room for a first-class medical college and hospital in Washington. This need not necessarily interfere with the existing schools and hospitals, which are excellent in their way and ably conducted, but their scope and usefulness were restricted by their small incomes, and they were not well enough equipped to give them the national importance of the institution that should be located here. An institution commensurate with the growth and importance of the capital of the nation must be a well-endowed affair. The money could be procured if the right men were approached in the proper way. It would only take a few weeks' or months' income of one of several capitalists who might be named. Being a comparative newcomer in Washington, and having had opportunities for observation elsewhere, he had been impressed with the fact that here in Washington, and here alone, a well-known institution in our neighboring city of Baltimore is considered the fountain-head of medical learning and the court of last resort for all abstruse scientific questions. It is not so regarded in the large cities of the East and Middle West, and the complacent assumption of superiority is looked on with amusement. It is certainly an excellent institution, and conducted by many able men, but it is not the only one, nor is it the best.

In surgery Dr. Neff had been especially observant, and had had the opportunity of comparing the work of the men there and in Washington, and unhesitatingly said that there were just as good surgeons here, in fact, he thought much better. If it were possible to get up a surgical tournament between Baltimore and Washington, and he were allowed to manage the Washington end of it, he could select at least half-a-dozen men, he was sure, who would do better work than their opponents, and win the contest.

Many members of the profession here have been in the habit of sending any case of importance to Baltimore, thereby reflecting on the profession here, and doing themselves and their patients a great injustice. This has been particularly noticeable during the past year, for many persons of prominence had been sent there, only to return in sealed packages in the baggage car. He was sure the Washington surgeons could accomplish this result equally as well, and at the same time save the families the cost of trans-

portation. Now, it was high time the profession here stopped "booming" Baltimore and started in to "boom" Washington.

If the medical institution that is to be the center of medical education in America is not located here it will be the fault of the profession. This is the place for it. Its geographical situation, magnificent libraries, Army Medical Library and Museum, laboratories and many public institutions, give it advantages possessed by no other city. A well-endowed college and hospital would attract students from all over the United States. It is no longer necessary for students to go abroad to complete their medical education, and it would eventually become the nucleus for medical students from all over the world.

Dr. E. L. Morgan said: There should be one or two medical centers controlled by the Government, which should examine medical students, and award diplomas to those passing a rigid examination. The medical colleges should simply train the students in order that they might pass successful examinations before the government board. *These medical institutions should not give diplomas;* simply train men and not graduate them. This would dispense with State Medical Examining Boards, and the doctor holding the diploma should practice in any State, regardless of any existing State law.

That medical colleges should not issue diplomas to their graduates was quite evident because all did not have the same facilities for instruction nor the same standards. We recognize their constitutional rights to issue diplomas to their graduates. There need be no special laws enacted on this subject. Those institutions desiring to educate young men under the old system could do so. It would be entirely voluntary on the part of medical departments to enter into the proposed arrangement, and many leading and progressive colleges would do so. This should not apply to students who have just matriculated unless they requested to be examined on graduation by the government board of examiners. The plan would give a uniformity of standard for graduation of the highest medical scientific course to be obtained in the world. We should as a country and profession be leaders of the world in our special department of learning.

Men connected with medical schools should not be on this board. The State medical examining boards could continue until their usefulness ceased, and this would be the case in a few years. Let the government board issue licenses to all doctors now practicing medicine, holding State board certificates. This board should not confer honorary degrees under any circumstances. The holder of a diploma should pass a satisfactory examination in medicine and the allied sciences. The Interior Department or some other department should issue the certificates and diplomas, which should entitle the holders thereof to practice medicine regardless of State or other medical boards wherever waves our country's flag. There

should be a number of medical boards at various centers; say three, four or more. It might make it easier for young men desiring to enter the governmental service if candidates were required to be physically sound. This project might be far reaching in its effects in the future, doing away with the present army and navy medical schools. The *Medical News* of Philadelphia some years ago, as he remembered, made suggestions along these lines: Two professors instead of one to each chair; one who was not in practice to study, set daily lessons and examine the students; the other to practice in the hospitals and examine students at the bedside on the lessons learned that day. The era of the medical star lecturer and orator was passing away in this century of books; his usefulness no longer existed. Medical literature was a vast intellectual domain. One professor could not keep up with the times and be in active practice.

Colleges would graduate more competent men than they now do. While medical boards have done much good, they are but human and may err. It is a great mistake to think that men to serve on medical examining boards should be connected with medical colleges or college hospital staffs, and that the medical laity, so to speak, should be beyond all professional and intellectual recognition on these boards. This idea of Dr. Morgan's would work a hardship and a financial loss to the professors and in addition thereto would double their labors. It would require all medical chairs to become endowed by admiring friends, and possibly free medical tuition, along lines followed by our public school system. Some or many must be sacrificed in all reforms and great movements of the day. The unfortunates immolated by their fellow man on the altars of history and science represent the victims of scientific progression. Some one must rise above the present surroundings and be the pioneer.

Dr. S. S. Adams spoke of the frankness which should exist between student and teacher. The day of deception and blind leadership on the part of the latter had passed. The instructor could not deceive his students as to the results of operations, the correctness of his diagnoses, etc., without detriment to himself. When the teacher learns that he has made a mistake he should acknowledge it before the class, and the students would always be found ready to make allowances, knowing that no one is infallible; they would respect him the more and profit by his mistake. This was the successful method of teaching. It was the secret of Dr. Busey's success as a teacher. If he made a mistake at one clinic he frankly admitted it at the next.

While Washington was undeniably a great center of learning, Dr. Adams doubted whether it could ever be a great clinical center, because it had not the class of persons who present infrequent diseases, *e. g.*, a manufacturing population. Few physicians in this city had ever treated a case of cretinism. He had been in

the Children's Hospital here since 1876, and had never seen a case there; but he had seen three at a single clinic in New York, the disease occurring with great frequency among the Slavs there.

Too many young men were led to study medicine thinking that it was a great way to make a living. They judged, incorrectly, from the success of a few practitioners that success was within the reach of all who received the degree of M. D. As a matter of fact, however, the majority of graduates do not make successful practitioners; personality has a most powerful influence on the result, and many physicians are by nature ill-fitted for a successful medical career.

He would like to see all of the medical schools of this city united to form one institution, and the best material for teaching selected to make up the faculty. This was the way to establish a great medical school here. A sufficient endowment might be obtained from some wealthy philanthropist; it would not be any more strange than that Carnegie should found a library in Washington.

Dr. D. S. Lamb thought it a good thing that there were several schools here, as the stimulus of competition caused each to put forth its best efforts.

Dr. Balloch, in closing the discussion, took issue with Dr. Adams as to the value of a vast amount of clinical material. One case well taught was of greater value than many cases studied superficially; besides, the study of the common diseases was more profitable than time spent on those which were of rare occurrence.

THE TREATMENT OF WEAK FEET AND FLAT FEET.*

By A. R. SHANDS, M. D.,

Washington, D. C.

It is not generally appreciated by the medical profession at large that the condition of flat foot, which is a source of almost untold suffering, is produced by many causes that are thoroughly amenable to treatment long before there is any danger of flat foot resulting. If there was a more thorough understanding among the profession regarding these causes, much suffering would be relieved and thousands of cases of distorted feet prevented. It is the purpose of this paper to call attention to the chief causes of

* Read before the Medical Society of the District of Columbia, October 29, 1902.

this trouble, and the treatment to prevent as well as to correct flat feet. Here, surely, is a large field for the orthopedic surgeon, to instruct how to prevent this very painful affection that so seriously handicaps many persons in the pursuit of their occupations, and in thousands of cases absolutely prohibits them engaging in occupations for which they are otherwise admirably fitted in every particular. Many papers have been written of late by orthopedic men calling attention to the importance of preventing the more common deformities that are likely to result from diseases of various kinds, thereby doing away with the necessity of having to correct the same. The present writer, several years ago, read a paper before this Society, on the importance of mechanical treatment of infantile paralysis to prevent the deformities following in the chronic stage of the disease. So far as I know nothing has been written on the prevention of flat feet. I propose to confine this short paper along those lines, including the treatment of both the prophylactic and curative stages.

This brings us to the consideration of the causes of acquired flat feet. Congenital flat feet are not to be considered at this time, although they constitute a very important class, but they do not entail the suffering that the acquired class does, nor do they handicap the individual to the same extent.

The static variety is most commonly seen in young adolescents at the time of approaching puberty. It appears in persons of weak muscular development, whose occupations necessitate a greater strain on the muscles and ligaments that support the arch of the foot than these are able to stand. Rapid growth favors it, as the structures are unable to stand the extra work. Many authorities tell us that about 75 per cent. occur between 15 and 20 years of age. This is well supported by the fact that shop girls, young waiters, barbers and nurses are especially prone to it. The cause is that the weak ankle and foot are unable to stand the strain of the superincumbent weight; there is a disproportion between the body weight and the apparatus sustaining it.

Lorenz, from his most thorough investigations, concludes that the trouble is due to an alteration in the positions of the astragalus, os calcis and scaphoid, which is simply an excessive pronation of the foot at the medio-tarsal joint.

A painful flat foot often follows severe injuries about the ankle; as Pott's fracture, or heavy weights falling on the top of the foot.

Several years ago I had a case of a gentleman who let a piece of iron, weighing 8 or 10 pounds, fall on the dorsum of his foot. No fracture resulted, but it left his foot weak and painful, and in the course of a few months he had a well-marked flat foot.

I have observed a large number of painful feet and even flat feet following an ordinary sprained ankle. The cause that I have always assigned for this result is that, following the injury, the ligaments and tendons that support the arch are stretched and are much weakened by the serous effusions that follow the injury to the blood vessels surrounding them. If this condition is not appreciated and the arch is not properly supported from the very beginning a painful or flat foot is very likely to follow as a remote effect of the sprained ankle. I have encountered many painful and weak feet following apparently slight injuries to the ankle and foot.

Several years ago I had a patient, a clergyman, past middle life, who had suffered with a painful and weak foot for about five years when he came under my care. He had sprained his ankle in being thrown from a carriage. He made a fairly good recovery from the acute symptoms, but the remote effect was a very weak foot, and often a very slight twist of his ankle caused so much trouble that he had to use crutches for several months. Then he would get about fairly well until another twist would compel him to take to his crutches again. This had been his experience for the five years before he came under my care. The treatment that I adopted consisted in the application of a Whitman flat-foot plate, which in about a year entirely relieved his condition. That was about eight years ago, and he has had no further trouble with the foot. The diagnosis in this case was simply "weak arch"; there was no depression whatever to the arch. He undoubtedly would have had a flat foot had his occupation been such as to have compelled him to bear much weight on his foot.

The most important ligaments that are injured are the inferior calcaneo-scaphoid and the calcaneo-astragaloid; the latter does more to sustain the keystone of the arch than all the rest; all the ligaments in the sole of the foot contribute to the support of the concavity of the foot, but the calcaneo-astragaloid is the most important. In severe flat foot the normal range of motion of the

ankle is limited, being from 75 to 80 per cent., while in an average flat foot it is from 30 to 40 per cent.

If a bared foot is placed upon the floor it will be seen that the inner border of the foot becomes altered and the internal malleolus is apparently nearer the floor. A certain amount of this pronation is normal, the excess is checked by the ligaments and muscles. Hence it is that any impairment of the strength of these structures will aid in the production of flat foot. The muscles that assist in supporting the arch are those that pass around the inner malleolus to be inserted into the anterior part of the foot; the *tibialis posticus* and *tibialis anticus*, together with the *peroneus longus* on the outer side assisting in a measure.

Recognizing the assistance that these muscles are to the ligaments, we can readily appreciate how any long position of standing, when these muscles are put to their utmost, will cause them to tire, thus throwing more weight on the ligaments, causing them in time to give way. The attitude of rest, a position so often assumed by persons whose occupation keeps them constantly on their feet, favors the production of flat feet. The active position of the foot is adduction, the position of rest is abduction. This relieves the muscles but puts more strain on the ligaments.

All kinds of ill-fitting shoes put the weight-bearing mechanism of the foot at a disadvantage and impede its normal function. This is a very prevalent source of painful feet as well as weak arches and even flat feet. Analogous to this form of flat foot, due to weak muscles, is the affection known as weak ankles, most commonly seen in growing children, which is due to a weakness of the muscles already spoken of as aiding in the support of the plantar arch. If this condition is not recognized and these muscles are not supported, this deformity is apt to follow, causing a permanent distortion of the astragalus. If the weight-bearing surfaces of this bone are not held in their normal relations to the articulating bones during the growing years of the child, the relief of this normal pressure will surely cause the bone to develop in an abnormal shape and thus produce a permanent flat foot. Shoes that are tightly laced about the ankles of a growing child will interfere with the normal development of the muscles intended to partly support the foot, and cause weak ankles and even flat feet. The proper adjustment of shoes to children is very im-

portant, for the remote effect of ill-fitting shoes is often very serious.

Another very fruitful source of painful and flat feet is acute articular rheumatism of the ankle and foot. This affection as a cause of flat foot is but little noticed by the authors of text books, and many authors do not even mention it. My observation has been that it deserves a very prominent place in the category of the causes of this affection. I have been able frequently to trace this as a cause, and could report numerous cases to support my assertion. These cases come to me with the history of having been treated by numerous doctors, quacks, osteopaths, etc., for rheumatism for months and years. These are the cases that go the rounds. They tell me that they have been told that they have chronic rheumatism that followed an acute attack. It is true that they did have an attack of acute articular rheumatism, but it is not true that they now have chronic rheumatism. Their trouble is the remote effect of the acute attack. All of us are familiar with the immense amount of swelling accompanying acute articular rheumatism. It is at this stage that the trouble occurs. During these attacks the infiltration of all of the structures—ligaments, tendons, fascia, etc.,—is so extensive that they become weakened from the boggy serous exudate, and as a result, after the swelling from the rheumatism subsides, the ligaments and tendons are not able to support the bones of the arch of the foot in their normal relation to each other. So, also, if the arch is not supported by some applied mechanical means some permanent injury is going to result, and that is most often flat foot. If the convalescent is so fortunate as to have an occupation that does not necessitate his bearing his weight on his feet, then he may escape; on the other hand, if he is less fortunate, and has to return to his work before the structures have regained their normal condition, he will sooner or later either have a flat foot, or will have a weak and painful foot that will be called chronic rheumatism. In this connection I beg you to bear in mind that chronic articular rheumatism is very rarely limited to only *one* joint.

A weak or flat foot is likely to follow osteitis of any of the tarsal bones or phlegmons about the sole of the foot; here the trouble is produced in the same way by the boggy serous infiltration of the supporting structures of the arch, causing them to become weak and allowing the superincumbent weight to change

the relations of the tarsal bones, one to the other, thus putting pressure on surfaces that are unaccustomed to it.

Shaffer some years ago called attention to the fact that a large number of flat feet were caused by a contracted tendo-Achillis. A contracted heel cord may result from many causes; probably the most common cause is infantile paralysis of mild degree. It also follows fractures about the ankle when the heel cord is injured. As a result of long confinement of the foot in splints during the process of repair of fracture, the tendon becomes permanently contracted, which causes the patient to involuntarily evert the foot when he begins to walk. This puts pressure and strain on structures that are unaccustomed to them, and as a result the arch will ultimately become lowered or remain painful. In cases of fracture above the ankle, the foot should be immobilized in dorsal flexion to prevent the heel cord becoming contracted, and thus this malady will be prevented.

Diagnosis of flat foot is easily made from the objective symptoms and needs no extended remarks. The diagnosis of "weak foot" is not so easy. A weak foot may be regarded as the preliminary stage of a flat foot, and if it is recognized early and properly treated flat foot will be avoided.

A line let fall from the center of the knee cap should fall normally just to the outer side of the second toe; any deviation of the line from this point is very apt to indicate a weak condition of the supporting structures of the plantar arch. Eversion of the foot is the most common position of a weak foot. Inversion or "pigeon-toe" is often due to a weak foot and can be cured by supporting the foot.

From a diagnostic standpoint it should be borne in mind that an everted foot need not have a depressed arch; just the opposite is most often the case. The pain is most prominent before the arch gives way; indeed, after the arch becomes obliterated pain is not a very prominent feature, unless the victim of such a condition has overtaxed his foot. Flat-footed persons do not suffer much pain unless their occupations are such that they are much on their feet; and they tire easily.

The prophylactic treatment of flat foot should be begun just as soon as the condition of weak foot is recognized, or just as soon as any affection is present that is likely to impair the function of the structures above described that support the arch.

I am fully convinced that the great virtue of the method of treating sprained ankles by strapping the foot with adhesive plaster strips lies in the fact that the equable pressure furnished by this form of tight bandaging prevents or relieves the serous infiltration into the supporting tendons and ligaments of the foot and supports them until nature has overcome the injury and restored them to their normal condition. Many persons have been saved from weak and painful foot by this method of treating sprained ankles. It is common to come across a patient who has what might be called a chronic painful foot which has followed an ordinary sprained ankle, and who has been treated for rheumatism. It is very satisfactory to treat one of these cases after it has gone the rounds, for by properly supporting the arch of the foot a prompt cure is effected. Several years ago Dr. I. S. Stone referred to me a lady who had sprained her ankle about two years before I saw her, and had suffered more or less ever since. She had *acute* attacks of severe pain extending up the entire course of the sciatic nerve, and had been treated for rheumatism, neuritis and sciatica by different physicians, from time to time, with no relief. On examination of her foot I found she had a perfect arch, but I could easily produce severe pain by putting the foot through the normal arcs of passive motion. By causing her to walk toward me, I discovered that she walked with her painful foot everted. The treatment in this case consisted in strapping the foot with adhesive plaster strips and putting a soft pad in the arch of the foot for support to the medio-tarsal joint. This treatment was continued until all acute symptoms had subsided, and I then made for her a Whitman's flat-foot plate, which in course of time effected a permanent cure.

The treatment of flat foot is simple, but its application must vary according to the degree and duration of the deformity. The normal motions of the foot must be restored and maintained until the weak structures have regained their normal strength. In all cases the patient must first be provided with a proper shoe.

The ordinary shoe that conforms to the fashion of the day never conforms to the normal condition of the foot. It usually cramps the toes and ball of the foot, and the high heel throws more strain on the medio-tarsal joint, adding to the weakness of the structures supporting that joint. One has only to watch the motions of the toes of a bare-footed person to appreciate how

nature is handicapped with the feet incased in ill-fitting shoes. The proper shoe is one that conforms best to the normal condition of a normal foot and gives greatest freedom of motion to all the structures of the foot. To relieve the strain on a weak foot the sole of the shoe should be slightly raised on the inner side. This puts more weight on the outer side of the foot.

In the mild form of weak and painful foot about all that is necessary is to apply the adhesive plaster strips, a process that is familiar to all of us, and then support the arch with a soft pad fitted so as to conform to the arch as near as possible. I apply the pad over the adhesive plaster, holding it in place with two strips of the plaster, and over all apply a snug roller bandage. This dressing is removed once a week, increasing the thickness of the pad each time until the arch is somewhat exaggerated. This process is repeated until the painful symptoms have subsided, and then the treatment is continued by leaving off the adhesive plaster and applying a soft pad attached to an inner sole, being careful that the pad is high enough to support the arch in its normal position.

In the severe forms of this malady the process described is preliminary to the application of a more rigid support than the soft pad, and for these cases I use the Whitman flat-foot plate. I have yet to see a case of weak and painful foot or flat foot that can not be benefitted, and a large percentage are permanently cured, by this device. It is a great boon to suffering humanity, and will cause this man's name to be handed down to posterity as a public benefactor. The proper application of this plate is quite an art in the severe cases. The plate is made over a cast of the foot. The art in making the plate consists in cutting away the cast so as to get the most pressure where it is needed. Unless the cast is properly shaped the chances are that the results will be disappointing. The surgeon should prepare the cast, and the instrument maker's duty is only to make the plate as directed. It is impossible for me in a paper of this kind to give the minute details for making this plate, for there are many little points of great importance that can only be acquired by practice and remedied after many failures.

Many cases are so severe that more heroic measures will have to be adopted than I have described. These are the cases where the arch is depressed and rigid, and so painful on passive motion that an anaesthetic has to be used. In these cases, under an

anaesthetic, the arch is forced into an over-corrected position and held there by means of a plaster-of-paris splint. The foot should be well covered with cotton before applying the plaster-of-paris, for if this is not done the pressure of the plaster on the bony prominences will give great pain. The first plaster bandage should be left on for about three weeks for the average case, and when removed permanently a Whitman plate is applied, and the patient has the proper shoe with sole built up on the inner side.

Various cutting operations have been advocated for the relief of the severe forms of flat feet. I have had no experience with them, for the good reason that I have never encountered any cases that could not be relieved by the means I have described.

In conclusion I will repeat that the prophylactic treatment of flat foot is the most important, and if all patients could be so fortunate as to have it properly applied there would be but few acquired flat feet to treat by the more heroic method. Just as soon as any affection of the foot is present that is likely to weaken the supporting structures of the medio-tarsal joint that joint should be supported until normal conditions are restored, and there is no better method of doing this than by strapping the foot with adhesive plaster and putting a soft pad under the plantar arch.

DISCUSSION.

Dr. Nichols said that one etiological factor of weak foot with which he had had a personal experience was a prolonged and prostrating illness like typhoid fever; the effect of this, in connection with the general malnutrition, was to cause weakening and relaxation of the ligaments of the foot.

Dr. J. Ford Thompson commended the paper. Unquestionably the Whitman brace was a God-send in many cases; but he could not agree that all cases could be so easily cured by conservative treatment; this was not the general experience. While the brace relieved many cases, and some of them permanently, surgery could often accomplish a permanent cure with greater certainty of success, in a shorter time, and with less inconvenience to the patient. For example, often in the early stage of "painful feet," forcing the bones into proper position under ether and fixing them by a plaster-of-paris dressing was more efficient than strapping with adhesive plaster and the use of a pad. In some traumatic cases osteotomy would effect an immediate and permanent cure. Where the ligaments were simply relaxed conservative treatment could not effect a cure; it could not shorten or tighten them. The best method was to secure bony union of the bones entering

into the medio-tarsal articulation by opening the joint and removing the cartilage from the ends of the bones ; this was good treatment in bad cases. There was a slight loss of motion in the foot, but the foot was serviceable. Conservative treatment should be employed except in extreme cases. A simple pad adjusted under the arch was often sufficient to relieve the symptoms. In extreme cases, however, surgical treatment was better.

Dr. Shands, in closing the discussion, said that he had not claimed that all cases could be cured by conservative means ; unquestionably some exceptional cases required surgical interference. If it could be avoided, however, it was not well to destroy the function of the medio-tarsal joint, any more than one would needlessly destroy the function of any other joint. It had a function, and the patient could not walk so well after ankylosis had been secured.

Dr. Thompson explained that he had advised operation only in extreme cases.

CASE OF EXTRA-UTERINE PREGNANCY IN FOURTH MONTH ; OPERATION.*

By J. TABER JOHNSON, A. M., M. D., AND ROBERT REYBURN, A. M., M. D.,
Washington, D. C.

M. B., white, age about 35 ; married 12 years ; never pregnant ; had always had good health. Had a scanty menstruation July 12, 1902, none in August or September. Had few of the usual signs of pregnancy—no vomiting ; no pelvic or bladder symptoms ; breasts, however, considerably enlarged.

September 27, was seen by Dr. Reyburn, who found the uterus somewhat enlarged and cervix soft. She had agonizing pain, referred to the uterus and vagina, coming on at intervals and with a pale sero-bloody discharge. A mass in the left side of Douglass cul-de-sac, projected against the upper part of the vagina.

Her temperature at no time rose above 100 degrees. Treatment chiefly symptomatic. Morphine was given freely, and occasionally hot vaginal douches ; and turpentine stupes over the abdomen. Her condition gradually improved, the pains lessened in severity, and in about two weeks she was comparatively comfortable. Diagnosis : tubal pregnancy ; operation positively declined.

October 9 the pains recurred with increased severity and con-

* Reported to the Medical Society of the District of Columbia, October 22, 1902.

tinued at intervals until Oct. 15. Oct. 16 they were severe and she passed into collapse; almost pulseless and evidently bleeding internally. Oct. 17 Dr. Johnson was called in consultation. Operation was again positively refused by her. Oct. 18 and 19 the pains recurred with increased severity and large doses of morphine gave only partial relief. On the 19th she expelled from the uterus some small clots with shreds of membrane attached. The abdomen became distended and painful and her stomach could retain nothing. She made no further objection to operation, and was taken next day to Dr. Johnson's Sanitarium. Up to this time there had been little rise in pulse or temperature and no evidence of sepsis. On admission her pulse was 130 and temperature 99.8.

Operation by Dr. Johnson Oct. 20, discovered a fetus of about 3 months in the abdomen, and fully two quarts of blood and clots in abdominal and pelvic cavities. The ruptured tube was easily found and tied off. No fresh hemorrhage occurred during the operation, but the blood clots were so adherent to the distended intestines and other viscera that the cavity was very thoroughly irrigated with hot salt solution—partly for the purpose of dislodging them and washing it out. Her condition was so desperate that further manipulation in the abdomen was suspended and an opening was made through the vagina from below, through which a gauze was drawn from above for drainage; abdominal cavity filled with normal salt solution and closed; patient removed to her bed and heated with hot-water bags.

Under further transfusion, hypodermatics of strychnia, &c., she rallied and (Nov. 15) was practically well.

Dr. Bovée said that because of the danger which attends these accidents it was fortunate that the patient did not die before she decided to have the operation performed. Some patients die within a few hours. Here, however, the hemorrhage took place in successive attacks, and consequently the woman lived along. Although there was no evidence of septic absorption, Dr. Johnson had used salt solution to wash out the abdomen. He himself had abandoned the use of saline solution unless there were signs of sepsis; he cleaned out the clots as well as possible and left the further care of them to nature. He had not had cause to regret having adopted this method.

Dr. Johnson said that the patient did not die from hemorrhage because the bleeding took place into the folds of the broad liga-

ment. This limited the hemorrhage. Successive hemorrhages, however, distended the sac until it ruptured, shortly before operation was decided on. He had used the solution mainly with the view of washing out the sticky clots by the force of the water; he did not dare to wipe or take out in any other way as many as he thought necessary.

CASE OF ANEURISM OF ABDOMINAL AORTA.*

By E. W. REISINGER, M. D.,

Washington, D. C.

Wm. B., a colored man, age 50, was seen early in May, 1902; had been treated for "kidney trouble" for about a year; was lying on his back; complained of intense pain; his legs were drawn up and he was making pressure with both hands on upper part of abdomen. There was a tumor in the abdomen the size of a small hand, slightly to left of median line, pulsating and expanding with each cardiac contraction. The systolic murmur was distinct and transmitted slightly upward and downward; the thrill could be plainly detected. The pain extended down the left side, into left groin and thence into scrotum.

Patient then said that about two years before, while carrying a heavy basket, he had a sudden severe pain in the region of the stomach, as if something had torn away, and soon lost consciousness. In half an hour he felt better, walked home and the next day reported for work. He seemed perfectly well until ten months afterward, when he began to have pain in the back, especially in the lumbar region. The paroxysms of pain became more severe and frequent, and soon extended down to the left groin and the scrotum. His suffering steadily increased, until in the last few months he had had a constant boring pain, that was intensified by eating and drinking; this pain was replaced by a paroxysmal pain on prolonged standing. He was ordered absolute rest, and potassium iodide, in large doses, but was too poor to carry out the first and most important part of the treatment.

I saw the case several times during the next two weeks, and finally, after vainly trying codeine, chloral and the bromides, had to give morphine for the pain. He progressively became worse until the pain was so intense that he was taken to the hospital for

* Reported to the Medical Society of the District of Columbia, October 29, 1902.

treatment, May 27, and was seen by Drs. Vaughan and Dudley Morgan in consultation. Operation was advised and refused, so he was placed on Tufnell's rest treatment. For several days there was a steady improvement; cardiac action decreased and pain became much less. On the night of May 30 he tried to get out of bed, while the nurse was out of the room, slipped and fell; he immediately became worse, the tumor increased in size, respiration was greatly accelerated and shallow, temperature elevated, abdomen tympanitic, and, in fact, all the symptoms of a leaking aneurism were present. He never rallied, became daily more feeble, and the symptoms intensified until the night of June 4, when rupture of the lacerated sac occurred. He died early in the morning of June 5.

The autopsy was held the same day. It showed an enormous retro-peritoneal hemorrhage; on removing the clots the tumor was laid bare. It began one inch below the diaphragm and extended downward and to the left, resting on the bodies of the first and second lumbar vertebrae, which were eroded, but the intervertebral cartilages were intact. All the other organs, including the kidneys, were normal. I would draw attention to the rarity of this lesion, the late appearance of severe symptoms, the localization of pain in the genito-urinary region and the ability of the patient to perform hard manual labor to within two months of his death.

Dr. J. Dudley Morgan said that when we consider that thoracic aneurism occurs but rarely, and that abdominal aneurism is seen only one-third as frequently, we must admit that Dr. Reisinger is to be congratulated on being able to present a specimen of such rarity.

Clinical experience shows that aneurisms occur as a rule in persons in whom we are least likely to expect to find them—in those of middle age and in individuals enjoying good general health. Occupation has much to do with their causation, particularly if there be a gouty or syphilitic diathesis, or the system is otherwise tainted. Porters and other persons whose occupation requires the exercise of great muscular effort are particularly liable to the disease.

Diagnosis is often difficult. Abdominal aneurism is harder to make out than thoracic aneurism, excepting thoracic aneurism close up to the aortic orifice. An aneurism situated high up near the diaphragm is more difficult to recognize than one located lower down. In the latter case, the presence of a pulsating tumor,

thrill, pain and symptoms caused by pressure on neighboring organs, aid much in the diagnosis. When the tumor is situated high up near the diaphragm the pain is often intense, and large doses of morphia alleviate but little ; it is a question whether this condition, besides the pain from pressure on the vertebrae, is not further aggravated by a neighboring cellulitis.

The patient was sent to **Dr. Vaughan** for treatment. He advised operation, as it gave the man his only chance for life : the chance was a very small one, but death was otherwise inevitable.

The abdominal aorta had been tied 14 times, but death had occurred in each instance. Recent experience, however, had shown that the operation would eventually be done successfully, probably within the next 10 years. In Keen's case the patient lived for 48 days, but died because the ligature cut through. In the present case the necropsy showed that there was only about an inch of space between the diaphragm and the aneurism, so that the ligature would probably have given trouble had the operation been performed. Another method which might have been tried was the ligation of the two iliacs. He favored this operation for many reasons, one of which was that the ligature was not so likely to cut through. Either of these methods was preferable to the one which was commonly used at the present time, viz : the Morse-Corradi method, the introduction of many feet of fine wire and the use of electricity. The percentage of permanent cures by the latter method was exceedingly small. On the other hand, a number of permanent cures had been reported after ligation on the distal side of thoracic aneurisms, after the manner of Brasdor or Wardrop. All were interested in finding a cure for this inevitably fatal malady, and he believed that the quest would be attended with success in the comparatively near future.

Dr. Acker recalled a similar case which he had reported last Spring. The remarkable point about his case, however, was that the aneurism gave the patient almost no trouble or inconvenience with the exception of a slight stomach trouble. The diagnosis was not definitely made. Drs. Nash and Carter saw the case with him. Death occurred suddenly from rupture of the sac.

Dr. D. S. Lamb said that the cause of the great pain in Dr. Reisinger's case was, of course, the erosion of the vertebrae. In Dr. Acker's case there was no erosion and no pain.

CHRONIC PANCREATITIS; WITH REPORT OF A
CASE.*

By B. L. HARDIN, M. D.,

Washington, D. C.

Chronic pancreatitis was first described in 1896, but it was only about eighteen months ago that the true significance of the disease was brought to the attention of the profession. Because it is practically a new disease to all of us, though it is not uncommon, because its diagnosis is possible and its treatment can be brought to a successful issue, and for other reasons to be described later, I feel justified in reporting the following case in some detail.

Mrs. C., age 49; family and previous history uninteresting until August, 1896, when her left breast was removed by Dr. Deaver of Philadelphia. He also removed her right breast in August, 1900. Except an acute attack of indigestion, manifested by abdominal pain and vomiting, for a few hours in October, 1900, she had been perfectly healthy until early in November, 1901, when, without any premonitory symptoms, she was suddenly attacked with severe epigastric pain, lasting four hours. During the succeeding two days she complained of fulness and discomfort in the region of the stomach, accompanied by eructation of gas, and on the third day she had a second attack of severe pain, followed this time by jaundice. In about a week the jaundice had disappeared, the urine cleared, and the stools resumed their normal color. She then began to have mild attacks of epigastric pain, with indigestion, soon followed by a recurrence of the jaundice, with loss of weight and a sense of great exhaustion. These symptoms continuing about a week, she was again suddenly seized with pain in the epigastrium radiating through to the back and interscapular region. From this time on these agonizing paroxysms recurred with remarkable regularity about every third day. In the intervals she suffered with great oppression and weight over her stomach, often temporarily relieved by eructation of gas in loud explosions. There was moderate irregular pyrexia, occasional nausea, complete anorexia, constipation, insomnia, exhaustion and mental depression.

Physical Examination.—She was medium sized, fairly well

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nourished, moderately jaundiced and had the facial aspect of suffering and despondency. Thoracic organs normal. Slight tenderness and resistance to deep pressure, localized in the epigastrium. No dulness on percussion and no palpable tumor. The liver was not enlarged, nor the gall bladder palpable. The urine contained bile; specific gravity, 1026; albumen and sugar absent. The feces were clay-colored, pretty well digested and contained no free fat.

The paroxysms of pain continued with regular intermittence, the jaundice gradually deepened, loss of flesh and strength progressed with marked rapidity, and the case took on a very serious aspect. Here was a case presenting these symptoms: both breasts had been removed for cancer; there was epigastric pain, permanent jaundice and rapid loss of weight, all of which pointed to malignant disease. But, on the other hand, the blood showed no secondary anaemia, the red count being 4,630,000, and hemoglobin 80 per cent. There was no leucocytosis, nor pronounced cachexia. Therefore, we concluded the case was one of chronic obstruction of the common duct by a gall-stone, and determined to operate.

She was operated on for gall-stone obstruction by Dr. I. S. Stone in January, 1902. On opening the abdomen the pancreas was found greatly enlarged, hard and nodular, especially at its head. The ducts appeared normal and contained no calculi. Our fears seemed realized, and we looked in dismay at what we thought was cancer of the head of the pancreas. The gall-bladder was opened and drained to relieve the jaundice, the wound closed and an unfavorable prognosis made to the family. But, fortunately, during the operation a section of the pancreas was removed and submitted to Dr. James Carroll, of the Army Medical Laboratory, for examination. He reported chronic pancreatitis and no evidence of malignancy. We hastened to change our prognosis. The patient made an uneventful recovery and is now perfectly well.

A consultation of the modern text books scarcely showed a reference to chronic pancreatitis, but at the Army Medical Library we were astonished to find that just such experiences as ours had been encountered in recent years by several other observers, notably the English surgeon, Mayo Robson, who published his first case in July, 1900. Since then he has reported twenty-two operated cases, with only one death, the latter being *in extremis* when

operated on. If we stop to consider the amount of literature on diseases of the bile-ducts, and the amount of operating done for gall-stones in the last twelve years, we must be astounded to think how long it was before attention was attracted to the pancreatic duct, which, on account of its like function and similar anatomic arrangement, must be subject to the same lesions as the common duct. Of course, chronic pancreatitis is not a new disease, and the case just reported illustrates how closely the symptomatology resembles that of malignant disease, thus teaching the sad lesson that many cases of chronic pancreatitis have probably been consigned to their graves with a certificate of malignancy when their lives might have been saved. In truth, a review of the cases that have come to autopsy in recent years confirms this conclusion. Robson and Opie have done much to bring this disease to the attention of the profession, but, notwithstanding their efforts, we conclude that they have met with poor success, when we turn to modern text books on medicine and surgery. For instance, a prominent text book on medicine, issued this year, remarks: "Chronic pancreatitis is thus far only of anatomic interest." Others give a few lines to the disease, and suggest medical treatment, without so much as a reference to surgery. One of the latest books on surgery does not even mention the disease.

The first case of chronic pancreatitis was recorded by Riedel in 1896, encountered while operating for gall-stones. Körte and Oser reported cases in 1898, Lancereaux in 1899, Ebstein and Robson in 1900, Robson stating that he saw his first case in 1892. Since 1900 many surgeons have encountered the disease while operating for gall-stones.

As a result of the experiences of these men the pathologists and bacteriologists took up the subject, and it is largely their experimental work that has given us a clue to the causation of the disease. Their work has secured the following evidence: The injection of bile into the pancreas causes chronic enlargement and hardening of the organ. Obstruction of the pancreatic duct and damming back of the secretions also produce chronic inflammation and sclerosis of the gland. The injection of *bacillus coli* or fecal matter into the duct produces the same result. Now, with these premises, let us set to work to find out for ourselves what conditions will bring about these results in our fellow creatures, beginning with a study of the anatomy.

The pancreas is a compound racemose gland of very soft texture, and is drained by the pancreatic duct or canal of Wirsung, which passes transversely from left to right through its substance. On leaving the head of the pancreas, the duct comes into relation with the common bile-duct and they continue for a short distance side by side, entering the wall of the duodenum together, where they then unite to form a short cavity called the diverticulum of Vater, discharging their contents through a common orifice into the canal of the duodenum. The common bile-duct becomes constricted immediately before it unites with the pancreatic duct, and it is here that a gall-stone is most likely to lodge. The lesser duct of the pancreas, or the duct of Santorini, usually opens into the main duct near the duodenum, but sometimes it enters the duodenum separately, at a distance of an inch or more from the entrance of the main duct. This is important to note, for in this fact lies the explanation that in some cases of complete obstruction of the main duct the gland secretions may escape through the lesser duct. In 34 out of 104 cases examined by Schirmer, the lesser duct either did not join the larger duct or enter the duodenum, and it is only in such cases as these that a stone lodged in the terminal end of the common duct would completely obstruct the pancreatic secretion. Therefore, in only about one-third the cases of obstruction are we apt to find resulting changes in the pancreas.

Bearing in mind the similar anatomic arrangement of the two ducts, we form two conclusions: 1st. That whatever obstructs the common duct tends to obstruct the pancreatic duct. 2d. The pancreatic duct is liable to infection from the same septic organisms as the common duct.

The causes of chronic pancreatitis may then be divided into: *First. Obstruction of the pancreatic duct.*—This may be brought about by: (a) Pancreatic calculi lodged in the duct. (b) A gall-stone lodging in the common bile duct, where it lies alongside the pancreatic duct, may press on the latter sufficiently to wholly or partially occlude it. Or, a gall-stone lodged in the diverticulum of Vater may obstruct both the biliary and pancreatic secretions, converting the two ducts into a continuous channel through which the bile passes directly from the liver to the pancreas.

Second. Infection by micro-organisms.—It is well known that the duodenum, and especially the bile-ducts, are common habitats for

various septic organisms, and, in cases of partial obstruction of the duct of Wirsung, conditions arise that favor the entrance of these organisms into the duct. But infection and pancreatic inflammation may and do occur without any duct obstruction whatever. Robson's belief that all cases of chronic pancreatitis are due primarily to obstruction by calculi is not substantiated by the literature, for there are several cases on record where there was no antecedent history of gall-stones, and where there was no evidence of calculi at the time of the operations.

Opie has recently reported four cases of chronic pancreatitis associated with persistent vomiting during life, and remarks that the vomiting favors infection ascending through the ducts.

Third. Toxic substances in the blood.—Alcohol has been thought by many to be an important element in the production of chronic pancreatitis, but in the majority of reported cases there has been no alcoholic history. On the other hand, Opie has shown that in about one-fourth of the cases of cirrhosis of the liver coming to autopsy, sclerosis of the pancreas has been found associated in greater or less degree. Hence we must conclude that the factors at work in the production of cirrhosis of the liver must also influence the pancreas. Interference with the circulation in chronic disease of the heart and lungs does not materially affect the pancreas.

A few students have written much to prove congenital and acquired syphilis a cause of chronic pancreatitis, but this view is not supported by the literature.

Carnot drew attention to the occurrence of chronic pancreatitis in general tuberculosis. Tubercular lesions of the pancreas have only been recorded a few times, and in these instances have not explained the pancreatitis.

Pathology.—Whether by obstruction from calculi or extension of inflammation from a duodenal catarrh, the first step is infection of the pancreatic duct, and an extension of the infective process into the head of the pancreas, resulting in inflammation of the gland. This infection, if virulent, may produce acute pancreatitis of hemorrhagic and suppurative varieties, but more usually a slow interstitial effusion takes place, followed by enlargement and organization. The enlarged organ now presses on the common duct, giving rise to enduring jaundice, thus simulating cancer of the head of the pancreas.

As explained before, under these same conditions of infection

the organ may escape serious changes, provided the accessory duct is so situated as to allow free drainage, and this may happen in a considerable number of cases.

Conclusions.—Chronic pancreatitis is caused by infection, the toxic material usually gaining entrance through the pancreatic duct, sometimes through the general circulation. Obstruction of the duct by a gall-stone is the most common primary cause.

Symptomatology.—The patient may have suffered with long continued chronic gastric catarrh. Suddenly he is attacked with severe epigastric pain. The pain, as illustrated in the case I report, is central and not over the gall-bladder. It radiates either to the back and interscapular region or toward the left. After lasting a variable time the paroxysm recurs with either regular or irregular intermittence, or there may be no paroxysmal pain, merely a deep-seated dull ache. Nausea and vomiting may accompany the paroxysms. In the interval the patient has anorexia, a sense of epigastric fulness and weight, belching or pyrosis. Sooner or later jaundice appears, the stools become putty-colored, and the urine contains bile. With each paroxysm the jaundice deepens and finally becomes permanent. Now there is progressive and quite rapid loss of flesh and strength until a most perfect picture of malignant disease confronts us. Some patients have complained of a curious sense of faintness almost amounting to collapse, and often there is a moderate degree of fever at intervals, again resembling cancer. Diarrhoea or constipation may be present. The stools contain an excess of undigested muscle-fiber, and sometimes free fat. Lipuria is of rare occurrence. In advanced stages of the disease glycosuria occurs, but sugar will not make its appearance until a large portion of the gland-parenchyma has been destroyed or functionally impaired, as has been experimentally proved by Opie. The pulse becomes slow when jaundice appears, and in the late stages there may be hemorrhages from various mucous membranes or into the skin. The patient finally dies of exhaustion.

Physical Examination.—On examination there is often a tender spot, central and about an inch above the umbilicus. There is more or less resistance to palpation over the epigastric region, and very rarely the enlarged pancreas may be felt. In a few instances where the enlarged pancreas presses on the vena cava ascites develops.

Diagnosis is very difficult. Thus far the best evidence of failures in pancreatic secretions is the presence of an excess of undigested muscle-fiber in the stools. Another good test is the absence of carbohc acid in the urine after the administration of salol.

Unfortunately the presence of fat in the stools and sugar in the urine are of very little value as aids in diagnosis, for they are not present until a very late stage of the disease, when the pancreas is almost entirely destroyed. They should always be examined for, as their presence would be confirmatory, but their absence would not negative the existence of the disease.

Mr. Cammidge, working under Robson, has found when urine from cases of chronic pancreatitis was boiled with an oxidizing agent and the phenyl-hydrazin test applied, there resulted a large number of delicate yellow needles, arranged in sheaves and rosettes. Normal urine, urine of various other chronic diseases, and even bilious urine, gave negative results when treated in the same way. But the cases so tested are too few thus far to allow us to conclude that it will prove useful in diagnosis.

I report my case in detail for three especial reasons: 1. To show that whereas formerly a patient suffering with epigastric pain, chronic jaundice and loss of flesh was thought to have either cancer or gall-stone obstruction, we must now include chronic pancreatitis. 2. To show that if at operation a hard and enlarged pancreas is discovered it need not necessarily be cancer. 3. To show that the history, symptoms and signs of the three diseases, cancer, gall-stone obstruction and chronic pancreatitis, are so similar that it is only by a thorough and painstaking refinement of symptoms that we can hope to differentiate between them.

The few points in diagnosis at our present command can best be emphasized, therefore, in an attempt to differentiate between the four diseases, namely: 1. Gall-stones in the common duct. 2. Cancer of the head of the pancreas. 3. Cancer of the bile ducts. 4. Chronic pancreatitis.

Now, these four diseases may have all the chief symptoms in common, namely, the history, the jaundice, the paroxysmal epigastric pain and tenderness, the wasting and the possible distention of the gall-bladder.

We may separate gall-stone obstruction by the fact that the pain is to the right of the middle line, and radiates toward the right shoulder, and the tenderness is over the liver, which may be en-

larged ; whereas, in chronic pancreatitis, the pain is in the mid-epigastrium and radiates directly backward to the mid-scapular line, and the tenderness is in the middle line, and not over the liver. Fortunately the treatment of the two conditions is the same, and a differentiation is not so essential.

But when we come to cancer of the pancreas a differentiation is of the utmost importance. Here we must rely mainly on an examination of the blood, which shows a marked secondary anaemia and leucocytosis in cancer, phenomena absent in both gall-stone obstruction and chronic pancreatitis. The pronounced cachexia and painless dilatation of the gall-bladder are further points in diagnosis of cancer. It is true that in long-standing cases of chronic pancreatitis the gall-bladder may become distended just as in cancer, but the distended gall-bladder will be painful in pancreatitis and painless in cancer.

In cancer of the bile ducts, the gall-bladder is much dilated. The various lymphatic glands may show involvement, and a tumor is sometimes felt.

Chronic catarrh of the bile-ducts may be distinguished by the absence of pain, the negative physical signs, and the maintenance of the general nutrition.

The diagnosis of chronic pancreatitis must then be based on the jaundice, the paroxysmal epigastric pain, the mid-epigastric tenderness and resistance, the rapid loss of flesh and strength with the absence of marked anaemia and leucocytosis, the presence of an excess of undigested muscle-fiber in the stools, and the peculiar reaction of the urine to the phenyl-hydrazin test.

In many cases diagnosis can only be made by exploratory operation, which should be unhesitatingly done in all doubtful cases.

Prognosis.—The disease may last for many months or perhaps years. Uniformly good results have been obtained in all cases properly operated on, and, in the hands of a good surgeon, when operation is not too long deferred, the mortality should be practically *nil*. Of course, when sugar is found in the urine, the outlook is not favorable, for we are then to understand that the pancreas is almost entirely destroyed.

Treatment is purely surgical, and is effected by clearing the ducts of obstructions as far as possible and draining the gall bladder or both ducts, as the circumstances may demand.

CHRONIC INTERSTITIAL PANCREATITIS.*

By I. S. STONE, M. D.,

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The chronic diseases of the pancreas have never been fully understood, nor has their study been without great difficulty, owing to the location of the organ. The acute diseases and tumors of the pancreas have been quite thoroughly investigated, as we may see by reference to standard text books. But it is of rather recent date that we discover any important mention of the chronic diseases of the organ, such as we shall mention this evening. The subject has heretofore been full of doubt and uncertainty to the writer, and he hails with delight the recent advances made in investigating these obscure affections. We are confident that many hitherto obscure cases will be fully and clearly explained as we come to understand the rôle of the pancreas in such conditions. The pancreas is a racemose gland, with ducts emptying into the middle third of the duodenum which may admit infectious bacteria just as does the common bile-duct. If we have "cholangitis" why not a similar condition of the ducts of the pancreas?

The pancreas is behind the stomach in what anatomists are pleased to call the lesser cavity of the peritoneum. It is about six inches in length and from one to two inches in width. Its general direction is nearly transverse, although the organ is quite movable, and will descend lower in the abdomen when enlarged by disease or when there is a general descent of the viscera, as in enteroptosis. The head of the pancreas is snugly fitted into a curve of the duodenum, and must share in any motion of that portion of the intestinal canal, and will be displaced if the stomach and duodenum descend together, as in gastrop-tosis.

The pancreas has two ducts; the principal one, known as the canal of Wirsung, furnishes a means of exit for nearly all the pancreatic fluid. The additional duct, called the "duct of Santorini," or ductus pancreaticus minor, is subsidiary, and both vary greatly in their distribution and outlet into the duodenum. The canal of Wirsung generally enters the diverticulum of Vater with the common bile-duct, having been parallel with it for a distance of something over two cm. The bile and pancreatic fluid, there-

* Read before the Medical Society of the District of Columbia, November 5, 1902.

fore, usually flow together into the duodenum. In 104 cases examined by Schirmer, 65 opened in this way. One case had three openings. In four the duct of Wirsung entered the common duct before entering the diverticulum of Vater. In 34 cases the duct of Santorini did not connect or anastomose with the duct of Wirsung. (Gray says the duct of Santorini is only subsidiary, and found "occasionally".) It frequently opens into the duodenum a little above the diverticulum of Vater. We can see, therefore, not only how infectious organisms may enter the pancreas, but can also understand how calculi in the common duct may also occlude the pancreatic ducts, and this in turn give rise to conditions of the pancreas, which complicate those already existing in the biliary passages.

Pancreatic calculi are frequently found *post mortem*, and several surgeons report having found them at the operating table. A most able and comprehensive paper by Dr. Geo. W. Johnston of this city, written in 1883, while resident physician of the Woman's Hospital in New York City, tells of 35 cases collected up to that time. Several surgeons have since reported one or more cases, among others Mayo Robson, *Lancet*, 1901, Vol. vii, p. 235, and McKenzie, *Montreal Medical Journal*. The cases reported by these gentlemen were all associated with hypertrophy of the pancreas and were probably cases of chronic interstitial pancreatitis. We have every reason to believe that the pancreas is more liable to infection if calculi are present, and beside there are other acute and chronic diseases to which it is subject.

Beside bacterial infection by way of the ducts, we may have hematogenous infection, as in typhoid, or other fevers or toxemias. According to Mayo Robson, gastric or duodenal ulcer may occasionally cause the disease.

Two forms of chronic interstitial pancreatitis are mentioned by writers: the "hypertrophic" and "atrophic."* These two forms may occasionally be shown to be different stages of the disease, but we believe that in most instances they are distinct. For instance, we have found only doubtful evidence of glycosuria

* Opie and others describe two forms of chronic pancreatitis, the interlobular and the interacinar. The former is most frequently observed, but rarely causes glycosuria except in the last stages of the disease. The interacinar variety, due to newly formed tissue in the lobules and islands of Langerhans, is less common, but is frequently associated with glycosuria.

in the form we are discussing at the present time. On the contrary, in acute pancreatitis, or in the atrophic variety, we frequently find sugar in the urine. In the "interacinar" form we find pigmentary changes, as we do in some of the severer acute cases, this condition naturally enough appearing in association with liver complications. In the hypertrophic variety we would expect to find "swelling of a portion or all of the gland; effusion into the interlobular and periglandular cellular tissue, associated with proliferation and detachment of epithelium lining the acini or small lobules and tubes. Then follows a crowding together of cells with accumulation of inflammatory fluids containing round cells and blood corpuscles leading to tension." (Mayo Robson.)

In the cases seen and reported by Fenger, Robson, Riedel, McKenzie, and those seen by myself, the pancreas was very much enlarged and in nearly every case a diagnosis of cancer was made. As nearly all the patients recovered, cancer was excluded. In the fatal cases (2 of 22) the *post mortem* examination revealed the nature of the disease. The sensation imparted to the hand is that of liver cancer, only the rough nodular surface of the gland is more compact and harder, with nodules closer together than in the liver. Its color is either dark gray or red. If acute infectious disease is present in any part of the gland we observe characteristic evidence, such as softening, degenerative conditions and, possibly, fat necrosis.

In one case reported with this paper the gland appeared to be nearly three times its normal size. In McKenzie's case it was eight inches long and three times as wide as normal, was "lumpy" and of unequal thickness. It had a "crepitant feeling to touch, and all normal structure apparently absent."

As all reporters agree that the appearance of the gland closely resembles cancer, it is evident that the diagnosis is not easy, even with the aid of sight. The lymph glands in the vicinity are enlarged in pancreatitis, as they are in cancer and in inflammatory conditions of the gall-ducts, hence we obtain but little comfort or information from their examination at the time of operation.

The typical cases show new or immature cells in great numbers. There is hyperplasia. In McKenzie's case fibrous tissue was in excess. In my own case the removal of a piece sufficiently large for microscopical examination was easy enough; there was no hemorrhage, and I was greatly surprised to learn the report of the

pathologist, who declared against malignancy, a statement which is quite well proven.

As may be expected, the time has not arrived when we can say a patient has or has not pancreatitis. The acute variety ought to be recognized if there has been hemorrhage followed by supuration. Not so with the chronic variety. We have derived our information thus far at the operating table or at the autopsy. The time is nearly at hand, however, when these rather obscure diseases will be known well enough to indicate a more rational if, perhaps, a more radical treatment. We know that a patient may have persistent jaundice as well as other symptoms of cholemia due entirely to pancreatic disease, with resulting obstruction of the common bile-duct. Pancreatic calculi may occasionally cause pancreatitis, but we believe that in a large majority of instances the disease is independent of calculi. What, then, are the chief diagnostic points of difference between this disease and others which it resembles? We know of but one other which resembles this disease which is of interest to the surgeon, namely, biliary obstruction. This may be due either to calculi or to carcinoma. Having studied this subject in two recent cases, I find there are certain elements of difference which may be noted between pancreatic or carcinomatous obstruction and obstruction due to calculi *in transitu*.

Patients with pancreatitis or carcinoma have obstruction due to pressure applied outside the common duct, while with gall-stone obstruction the lumen of the duct is generally closed tightly by the stone. In the first we have gradual development of jaundice, with frequently recurring attacks of pain. This pain is caused by a collection of bile or mucus, etc., behind or above the obstruction; a considerable portion of this collection is finally expelled, temporarily giving relief to the patient; but the paroxysms recur again and again. A gall-stone, having entered on its passage through the common duct, rarely recedes or allows the patient complete relief until it finally reaches the intestine. Frequent attacks would indicate obstruction outside the duct, as we have mentioned, rather than the passage of many gall-stones. Another important difference is that of age. Patients in the fifties or over probably have cancer, while gall-stones or pancreatitis may occur in younger persons or at any age.

The diagnosis of chronic pancreatitis is difficult enough even

with the abdomen open, and in the present state of our knowledge is almost impossible without exploratory operation. Mayo Robson reports two cases which did not come to operation, and I have seen two associated with diabetes, both of which died, one of typhoid fever, the other of gangrenous phlebitis of left leg. These cases are only mentioned here to say that their symptoms were so much alike, were so typical of pancreatic disease, that they serve me as guides in the diagnosis of such cases. They were essentially chronic because of their persistence. They both had the vague, uneasy distress in the epigastrium which I at first thought due to gastritis or gastric ulcer, until sugar was found in the urine and completed the diagnosis. These cases are as interesting to the physician as the surgeon, and we may eventually find it possible to diagnose certain so-called "dyspepsias" as pancreatic, and not gastric.

The outset of this form of pancreatitis is generally painless, unless due to the passage of a pancreatic concretion, when it will closely resemble gall-stone colic. There will probably be in either case nausea and vomiting if the pain is severe. The pain is a little above the umbilicus, in the median line, and not on the right side and under the scapula as in gall-stone colic. This pain is frequently called "gastralgia" by mistake. But we may expect to hear patients express the opinion that they cannot describe the pain. It is not a severe pain, but an ache, a distress, a "misery," as some call it. There may be flatulence and fermentation dyspepsia, associated with uneasiness in the epigastrium.

The symptoms of pancreatic disease are almost always masked by some associated disease of other organs. Most frequently we will observe pressure symptoms as shown in jaundice or cholemia. We should find but little rise of temperature, and, should it become much elevated, with quick pulse, we may expect the acute infectious type of the disease. Pigmentation of the skin will be found in certain instances, and we are confident the pigment is distinctive, or, at least, unlike that produced by diseases of the liver, or suprarenal capsules.

These vague, indefinable symptoms, which continue for many weeks or months, may eventually disappear or else will give greater anxiety. The patient will lose flesh and may present all the symptoms of a wasting disease. It is then that we think of cancer, and due care must be taken to exclude cancer of the

stomach. Some writers mention fatty stools. We do not consider this symptom of much importance. These patients will scarcely eat fat enough to show in the stools even if undigested, and besides in many of the most advanced degenerative cases with necrosis, fat was not to be seen in the stools.

Two recent cases presenting similar symptoms (one to be reported later) furnish me an opportunity to compare the symptoms of chronic pancreatitis with those of cancer. Both patients were women; one 62, the other 49 years of age. Both had persistent jaundice with pain simulating gall-stone colic. In both, the attacks of pain were severe, requiring hypodermatic injections of morphia for relief. The seizures were generally at intervals of three, and sometimes four, days. The relief from pain was nearly complete until the next attack. The same consultant had seen both cases and had pronounced the symptoms due to the presence of gall-stones. Both patients had lost much in weight, yet were in pretty good condition for operation. The symptoms usually seen in obstructive jaundice were common to both patients, including the slow pulse and presence of bile in the urine, etc. Neither case had an appreciable tumor in the region of the gall-bladder. When the abdomen of the younger patient was opened, no stone was found, the case pronounced malignant disease of the pancreas and a gloomy prognosis made. Drainage of the gall-bladder was instituted, and was followed by complete restoration to health. In the older patient a large and nearly empty gall-bladder was found containing a small stone and obstruction of the common duct, thought to be due to cancer because the liver appeared to be the seat of carcinoma in early stage. The gall-bladder and small intestine were sutured together, leaving an opening for the escape of bile into the bowel (cholecyst-enterostomy). I did not find the pancreas enlarged in this case. It was not elongated, nor was it apparently changed in any way unless smaller, yet the head of the gland may have been the seat of carcinoma or pancreatitis, which could constrict the common bile-duct and cause all the symptoms. The patient has made a symptomatic recovery, as did the other patient. Both were promptly relieved of pain and jaundice. Both have gained considerably in weight and are comfortable. Just how soon the disease of the liver may manifest itself, time alone will tell. (The patient is still well.)

The *treatment* of pancreatitis should be "expectant," unless positive indications for surgical treatment arise. We are not in a position to say that every patient with obscure symptoms pointing to the region of the pancreas should be examined through an abdominal incision, however lacking in resources we may be at the present time. If, however, we find a tumor in that region, or if we can exclude the diseases of the stomach and in any way conclude that there is inflammation of the pancreas, the proper treatment is to open the gall-bladder and provide drainage.

Treatment by rest, diet and attention to the function of the liver should always be tried in the less serious cases even though beneficial results are not always obtained. A patient with the means to afford treatment at Carlsbad should try that famous spa. If unable to go abroad some degree of imitation of the treatment may be tried at home.

Mrs. C., white, age 49, married, was admitted to Columbia Hospital, Washington, D. C., January 11, 1902. She had one child. Since childhood had had no illness except tonsillitis, until a suspicious growth in the left breast required operation in 1896. The right breast was removed for the same reason in 1900. No sign of recurrence anywhere at the present time. First symptom of present illness, eleven weeks before admission, occurred during or just after luncheon and was much like indigestion, the pain continuing during the afternoon. During the night the patient slept, and was fairly comfortable. The following day another attack came on and lasted several hours, until her physician gave morphia hypodermatically, which afforded relief. The second day after this she had another attack, not so severe, and four days after this the fourth attack occurred. By this time jaundice was well pronounced, and the diagnosis of biliary obstruction due to gall-stones was made. After two weeks the symptoms appeared to subside, and the patient had an interval of rest from pain and the jaundice perceptibly diminished. But the relief did not last long. At this time (about December 1, 1901) Dr. B. L. Hardin took charge of the patient, and finding that the symptoms were persistent, requested that the writer should be consulted with reference to operation. The patient was deeply jaundiced and appeared to have a completely satisfactory history of obstruction of the common bile-duct due probably to gall-stones. The pain, however, was not over the gall-bladder, but was in the epigastrium above the umbilicus, and extended directly through to the back. It did not radiate toward the right side, nor toward either shoulder. The pain was thought to be due in part to indigestion.

She declared that her stomach felt distended as though filled with gas, and she experienced relief after eructation.

Operation January 13. Ether was administered and the patient placed on the table, with shoulders elevated; the body inclined at an angle of 45 degrees. Incision in right linea semilunaris, from lower border of cartilage of rib downward for five inches. Careful search of the gall-bladder and biliary ducts revealed no stone. To find the cause of the obstruction seemed a difficult matter. The liver, stomach and omentum all appeared to be healthy. Careful exposure of the pancreas showed its great size, and, judging by its appearance and the peculiar hard, nodular feeling, a diagnosis of carcinoma was made. Quite naturally we felt disposed to think malignancy possible, for the patient had been subjected to operation for supposed cancer of both breasts. Two or more visitors present—one a highly competent physician, the other, an eminent surgeon—concurred in the diagnosis so far as to say it was probably a malignant degeneration of the pancreas. With the hope that some benefit might result from drainage, the gall-bladder was sutured in the wound and a tube inserted. With the exception of a posture paralysis of both arms, the patient did remarkably well. The pain and jaundice promptly disappeared, and the patient left the hospital in good condition, with the exception noted above, six weeks after operation. The fistulous opening closed permanently about that time, and she is now nearly well in every respect. Her arms are almost as strong as ever, and she has gained 20 or 25 pounds in weight, and looks the picture of health.

DISCUSSION OF THE PAPERS OF DRs. HARDIN AND STONE ON PANCREATITIS.

Dr. Claytor said that the papers were very interesting. He congratulated Dr. Hardin on the manner in which he had presented the subject, particularly on the illustrations, which gave one a better idea of the etiology of pancreatic disease than could be obtained from hours of text-book study. It was well to report all such cases; this was the first of the kind reported in this city, and physicians would now be on the lookout for others. The disease was interesting to the physician because he had to treat the case first and make the diagnosis. It was interesting to the surgeon because he had in his hands the means of bringing about a cure. He commended the removal of a section of the organ for microscopical examination; the result in this case showed that it was not well to give a positive prognosis in cases of suspected malignancy before such an examination was made, and it here enabled the physicians to correct the diagnosis which had been made, thereby greatly relieving the anxiety of the patient's family.

The occurrence of sugar in the urine in the later stages of

pancreatic disease was interesting. It was now believed that the pancreas had two secretions, one external, and the other internal. The latter, a glycolytic ferment, had the property of breaking up glycogen, and so long as the islands of Langerhans, which are supposed to produce this internal secretion, were intact, sugar did not appear in the urine. With regard to the case mentioned by Dr. Stone, it might be said that there was one form of glycosuria associated with cirrhosis of the liver and pigmentation of the skin.

Diagnosis was very difficult, and generally impossible. One must differentiate between four conditions: obstruction of the common duct by calculus, obstruction of the duct by cancer, cancer of the head of the pancreas, and chronic pancreatitis. An exploratory incision was justifiable in each of these conditions, however, and two might even be cured by it; hence, it was an important factor in making a differential diagnosis.

Dr. Nichols said that pancreatic disease was so difficult to diagnose that special importance and interest attached to the information derivable from the urine and evidences of suppression or retention of the pancreatic secretion as shown by the feces.

Sugar might be present in the urine when there is no pancreatic disease, and it might be absent when pancreatic disease existed; but when it appeared in the urine in connection with local symptoms it was of great diagnostic significance.

It enabled him once to make a diagnosis of pancreatitis in the case of a man who had suffered a fracture of a rib near the vertebral column in the pancreatic region. After union of the fracture, deep-seated pain persisted for a number of weeks with increasing prostration. Glycosuria developed and the diagnosis of acute pancreatitis was made. At the autopsy an abscess of the pancreas was found in the region of the former fracture.

Absence of the pancreatic secretion from the intestine should result in lack of the usual ferment activities, and if this lack could be demonstrated by fecal examination, information might be gained pointing to pancreatic disease. The ferment activities affected three classes of food stuffs: proteids, carbohydrates and fat. An excess of muscle-fibers in the stools was considered (other causes being excluded) to indicate deficiency of tryptic digestion; the administration of test capsules of albuminoids, with a view to testing their digestion in the bowel, had also been tried.

Investigation of amylolytic action in the intestine had not, so far as he knew, been suggested; but it would seem feasible, or at least worth trying, to test for the presence of pancreatic diastatic ferment by giving starch in a capsule, the stomach contents being previously acidulated by a dose of hydrochloric acid, and later testing for starch granules in the stools.

The presence of fat in the stools had been regarded as of diagnostic importance in pancreatic disease, yet in practice had proven

disappointing. Probably by eliminating other causes of fatty stools, and by administering definite test meals of fat, this sign could be made of more aid. Fat necrosis was an important evidence of pancreatic disease, but was available only in connection with laparotomies. Under the not unreasonable supposition that in those cases where fat necrosis was present, the fat-splitting ferment would find its way into the blood and urine, Dr. Opie had in one case attempted to test for this ferment in the urine, with sufficient success to make the test worth trying when further opportunities are afforded.

Dr. Vincent said that the subject had been so thoroughly considered that little remained to be said. He had seen only a few cases of pancreatic disease other than cancer. There must be a certain degree of pancreatitis in cancer of the organ. The symptoms were not characteristic or constant enough to enable one to make a diagnosis in the majority of cases of pancreatitis. The presence of muscle-fibers in the stools was not an absolute test; the pain was not distinctive, and the vomiting, emaciation, etc., were frequently observed in other conditions.

Chronic pancreatitis was an exceedingly rare affection. In a report of the post mortems which had been performed at one great institution, there were only 114 instances of pancreatic disease of all kinds; the autopsies were made by expert pathologists. Hence, while one should be on the watch for the disease, it was of rare occurrence and would not be very often seen. The diagnostic points mentioned in connection with chronic pancreatitis were too fine to be of much service with the means and methods at hand; the patients were often poor; they refused to go to hospitals, and there were many other obstacles to making a correct diagnosis in these cases. Generally, the best that one could do was to make a diagnosis of chronic disease, apparently malignant, behind the stomach; the exact diagnosis could not be made with any degree of certainty in the vast majority of cases, except by means of an exploratory incision.

Dr. Kleinschmidt said that it was remarkable that those who had considered the subject this evening, with the exception of Dr. Stone, had spoken of the pancreas as if it were an ordinary gland, and they had laid stress on obstruction of the ducts as an etiological factor in pancreatitis. They had not mentioned the peculiar cells which mark the pancreas as a ductless gland. We did not know the nature of the secretion, but it was not discharged externally, and in this it resembled the secretion of the thyroid, thymus and similar glands. It had been stated upon good authority, that there was a diabetes of pancreatic origin which was very fatal, and that the disease originated in the peculiar cells of the islands of Langerhans.

Dr. Hardin had said that the first reference to chronic pancreatic disease was made in 1880. Strümpel, however, gave references going back earlier than this. With reference to the

laboratory tests which had been mentioned in the discussion, it should be remembered that fat is not absorbed in the form of an emulsion, but as glycerin and fatty acids or as a soap; also, that the pancreatic diastatic ferment did not change starch to sugar except in the laboratory; this change took place in the walls of the intestine. All this made the diagnosis difficult. He would not make a diagnosis of pancreatic disease because he found either muscle-fibers or fat in the feces.

Dr. Behrend asked Dr. Stone how opening the gall bladder relieved the pancreatitis if there was no obstruction by a calculus in the pancreatic duct. Dr. Stone explained the point by means of diagrams.

Dr. J. Dudley Morgan inquired how often the supplemental pancreatic duct was absent, and how often it was blind when present; also, whether a calculus could not exist in the ampulla without producing pancreatitis.

Dr. Hardin, in closing, said that the lesser duct was present in about two-thirds of the cases. Abnormality was even rarer; only in 34 of 104 cases was there no anastomosis between the lesser and the principal duct. In answer to Dr. Behrend's question he explained that a stone in the gall-duct might by pressure cause damming back of the pancreatic secretion, and by opening the duct and relieving the tension the pancreatic disease could always be alleviated and usually cured. In reply to Dr. Vincent he said that he had not claimed that all cases presented the complete set of symptoms which he had described; nor had he claimed that the disease was of common occurrence. It occurred more frequently than was generally supposed, however, and often enough to warrant us in being on the lookout for its presence; the fact that two cases had been seen here within a few months showed this. The appearance of the affected gland at operation or autopsy very much resembled that seen in cancer of the organ, and it was almost impossible to distinguish between the two diseases without a microscopical examination.

Dr. Vincent explained that he had not intended to minimize the points referred to by Dr. Hardin. He only meant to say that in every-day practice the disease was seen but rarely, and a diagnosis was in most cases impossible. The occurrence of two cases in this city but recently would make it appear that the disease was more common than is generally recognized. But out of 1,000 cases of pancreatic disease reported from a London hospital only 114 were chronic pancreatitis; and a very careful examination was made in each instance.

Dr. Stone said that in looking back over our experience we all would find unexplained cases of disease in the pancreatic region, and it might be that some of them were instances of chronic pancreatitis. Henceforth we should be on the lookout for them.

Dr. Kleinschmidt said that chronic pancreatitis was in many cases connected with the excessive use of alcohol.

TRAUMATIC STRICTURE OF THE OESOPHAGUS. OPERATION BY ABBEY'S METHOD.*

By W. C. BORDEN, Major and Surgeon, U. S. Army.

Traumatic stricture of the oesophagus usually occurs in the upper or lower part of the tube. When these strictures become so narrow as to largely prevent the passage of food operation is absolutely necessary in order to save life, and the surgeon is compelled either to attempt divulsion or division of the stricture or the establishment of a gastric fistula. The choice between the establishment of a permanent gastric fistula and operation on the oesophagus itself lies in favor of the latter method.

Operations on the oesophagus for stricture are of three kinds : 1. External Oesophagotomy ; 2. Internal Oesophagotomy ; 3. Retrograde operations through the stomach.

When the stricture is in the upper part of the oesophagus the operation of external oesophagotomy may properly be performed, as the oesophagus can be readily reached in this location and the stricture divided. When the stricture is lower down the operation of internal oesophagotomy, or retrograde operation through the stomach, must be considered. Of these two methods, the first is only to be mentioned to be condemned. It is obvious that blind cutting in the oesophagus, from its close relation to important structures, is a most dangerous procedure, and, in fact, the mortality from such operations has been very high. It follows when the oesophageal stricture is so low that it cannot be reached by the operation of external oesophagotomy and is so small that dilators, introduced from above, cannot be used, that retrograde operation through the stomach is the only operation which should be attempted.

The two retrograde operations which are at the surgeon's command are dilatation or divulsion and incision. Retrograde dilatation was first proposed by Loreta of Bologna, and the first operation of this kind was done by him in October, 1883. The operation consists in dilatation or divulsion of the stricture from below after gastrostomy. In this operation the abdomen is opened by an incision similar to that used to establish a gastric fistula and the stomach is, in part, drawn well down through the opening. An incision is made in the upper part of its anterior

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wall, through which the instruments necessary for dilatation or divulsion of the stricture are passed.

Abbey, in the *Medical Record* of February 25, 1893, published the report of a case operated on by him by a modification of the Loreta method, and which Abbey called the "string" method. In this method the abdomen and stomach are opened and a small silk cord is carried from the opening in the stomach up through the stricture and out at the mouth or through an opening made in the oesophagus in the neck. Then, by the introduction of a conical-pointed sound, the stricture is put on the stretch and by backward-and-forward motion of the string a blunt cutting of the stricture is effected. In Abbey's first case the upper end of the string was brought out through an incision in the neck; in the second case he brought it out through the mouth.

In looking up the literature on the subject in the Surgeon General's Library, I can find but two cases reported as treated by this method since the publication of Abbey's paper. As the operation gives such satisfactory results, and as the blunt cutting of the tissues by the string is so devoid of danger, this method of treating small strictures of the oesophagus has great advantage, and I have ventured to think that the presentation of a case treated by this method might be of some interest to this Society.

The history of the case is as follows :

G. M. G., August 26, 1901, during a fit of temporary insanity, swallowed a solution of lye. When the inflammatory conditions had subsided he found difficulty in swallowing. Admitted to the General Hospital, Washington Barracks, D. C., November 17, for operation on account of traumatic stricture of the oesophagus of narrow caliber.

He was unable to swallow anything except liquids, and these only in small quantity. On passing an oesophageal bougie a stricture of large caliber was encountered opposite the cricoid cartilage; and 14 inches from the teeth another stricture, through which no instrument could be passed.

December 10 gastrostomy was performed and an attempt made at retrograde dilatation. A stricture was found just above the cardiac orifice, and of so small caliber that all attempts to pass instruments either from the mouth or stomach were unsuccessful. As the patient was in a very weakened condition from inanition, prolonged operation was impossible and the stomach was sutured to the abdominal wall and a gastric fistula established. He rallied from the operation and had no bad after effects. He was fed through the gastric fistula, and materially improved in health.

There was little or no escape of food from the fistula, which was purposely made small. He was greatly depressed mentally, and desired further operation.

June 28, 1902, operation by Abbey's method was performed. The fistulous opening in the stomach was enlarged and attempts were made to pass instruments through the stricture both by mouth and stomach, but without success. The oesophagus was then opened at the point of election, after which it was found possible to pass a filiform sound from above downward into the stomach. A silk thread was attached to one end of the sound, the sound was grasped through the stomach opening, and with the attached string was dragged through the stricture; traction sawing with the string increased the lumen of the stricture and was continued until a small bougie could be passed. The narrow, tubular stricture, $3\frac{1}{2}$ inches in length, just above the cardiac orifice, was of such extent and of so small caliber that divulsion or division by any other method than the string method would have been exceedingly difficult and dangerous. By putting the stricture on the stretch with conical pointed sounds and by to-and-fro sawing motion of the string it was divided, and a large stomach tube was passed. This tube was fastened in the stomach and brought out through the opening in the neck. The patient rallied well from the operation and had no bad after effects. On the 4th day the tube was drawn out and the opening in the oesophagus allowed to close by granulation, the patient being fed both by the mouth and the opening in the stomach. Oesophageal bougies were passed daily, the patient soon getting so that he could pass them himself.

September 26, the gastric fistula was closed and the patient now swallows food very readily by mouth; and by using a bougie about three times a week the oesophagus shows no tendency to contract.

DISCUSSION.

Dr. A. F. A. King commended the operation done by Dr. Borden. So far as he knew it had not before been performed in this city. The stricture was a bad one, and Dr. Borden's success was largely due to the ingenious method which he had employed. Had this result been obtained from such an operation 25 years ago it would have been considered a miracle; it was almost one now.

Dr. J. Ford Thompson recalled a case and specimen which he presented last winter. It was one of the worst cases of oesophageal stricture that he had ever seen; it was long and very tight, and was situated in the lower part of the oesophagus; repeated attempts to pass instruments of the very smallest size failed. He performed gastrostomy, and the child recovered and was running around in a few weeks. It died later, however, of an accidental condition. The stricture could not be penetrated from below.

He had made at that time some instruments which he had since used to good advantage a number of times ; they were similar to the ordinary olive-shaped bougies, but were mounted on copper wire ; the latter bends easily, and prevents damage. The instruments ordinarily used are, as a rule, too large, and failure to pass them is often due to this fact. All cases could be cured if they were treated in time by proper sized instruments.

All the cases of oesophageal stricture which he had seen had resulted from swallowing lye. His treatment had been successful in all cases excepting the one just mentioned. The instrument can be passed from below easier than from above for various reasons ; but where an instrument of any size whatever can be passed from above gastrostomy is uncalled for.

One method which had been suggested was to get the child to swallow a shot attached to the end of a thread as a guide, in the hope that it would pass the stricture and enter the stomach ; then, by means of a gastric fistula, attempt is made to enlarge the lumen at the site of stricture by means of the string. This method had failed in his hands, because the child could not swallow the shot and thread. He did not believe in cutting these strictures when it could possibly be avoided ; (but in the next case in which it should be necessary, it was his intention to use a small wire saw for the purpose.) In Dr. Borden's case forced divulsion was not possible. The string method was open to the objection that the string acts at an angle, and hence it is difficult to tell whether the stricture will be cut at all or not. In some cases, when the stricture is small and permeable, intubation is useful. The tube need not be removed oftener than once in two weeks or so.

He had no apprehension as to the outcome of these cases of stricture when an instrument could be passed from above or below. Dilatation from above was the proper method of procedure when the stricture could be passed from above ; if this was not possible, a gastric fistula must be made and the operation performed from below.

Dr. Borden agreed with Dr. Thompson that there was usually no indication for radical operation if the stricture could be passed from above. He did not agree, however, that operation was unnecessary in every case in which an instrument could be passed from above ; some strictures were so long and tough that radical operation was called for even under these circumstances.

In every case one should seek, if possible, to prevent the formation of stricture after the traumatism. Where operation becomes necessary, the string method had many advantages, of which the principal was its safety. The string could be made to cut at a definite point in the stricture by putting the stricture on the stretch by means of a bougie. The result of these operations is good ; Abbey had reported a good result two years after operation. Whereas Dr. Borden's patient was fed by rectum only before the operation, he now could eat anything.

CONGENITAL HYDRONEPHROSIS.*

By G. N. ACKER, A. M., M. D.,

Washington, D. C.

Two cases of congenital hydronephrosis recently came under my observation and I thought they were of sufficient interest to present the histories and specimens to the Society. This condition is certainly not common, and though all works on the Practice of Medicine refer to it, yet they do not give any idea of its frequency. Holt states that he has known of 8 cases in 726 consecutive autopsies at the New York Infant Asylum. The two cases which I report are the only ones that have occurred in my practice, and none have ever been noted in the numerous autopsies at the Children's Hospital.

The condition is due to congenital malformation at some point in the urinary channel. Such malformation may consist in phimosis, congenital stricture of the urethra, valve-like insertion of the ureter in the bladder, or an abnormal insertion in the pelvis of the kidney. In some cases the cause cannot be demonstrated even on autopsy. To produce a high degree of hydronephrosis it is not necessary that the obstruction be complete or permanent. Complete obstruction often results in atrophy of the kidneys without hydronephrosis. The more favorable conditions are where the urinary passages though narrowed are still permeable. In both my cases the cause appeared to be in the bladder near the opening of the ureters or the verumontanum. The lesions vary according to the degree of distention. Where the obstruction is at the entrance of the ureter in the bladder, the former is dilated throughout its whole length, and the dilatation may be extreme.

As the process advances in the kidneys the pyramids yield under the pressure of the accumulating fluid until the renal structure atrophies, and finally nothing is left but a cyst, subdivided by the fibrous septa which exist in the kidneys, into larger or smaller pouches. The inner surface of the sac is usually smooth and thin. If the obstruction is in the urethra the bladder may become distended, its muscular coat hypertrophied, and its mucous membrane affected with catarrhal inflammation. Hypertrophy of the heart is a common complication ;

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this was marked in my second case. A full autopsy was not allowed in the first case, so the heart was not examined.

Distention of the abdomen is a prominent feature in congenital hydronephrosis, for as a rule both ureters are involved and the accumulation of water is large. The veins of the abdomen are enlarged and the skin has a pale, smooth and shiny appearance. In some cases of this disease there has been such a high grade attained before birth as to seriously interfere with delivery, prevent the respiratory movements of the child, and therefore cause death. In both cases reported by me the attending physicians stated that there was some difficulty with the delivery of the enlarged abdomen and that this enlargement persisted. By compression of other organs various complications arise, such as constipation, vomiting, dyspnoea and palpitation. The intestines are pushed forward and filled with gas. During the operation on each of these patients it was necessary to puncture the intestines in order to return them to the abdominal cavity.

Complete anuria may suddenly occur, in fact, has been observed as the first symptom which aroused suspicion of hydronephrosis. For the production of anuria it is not necessary that both ureters should be obstructed, for a sympathetic suppression of the urinary secretion in one kidney is said to have occasionally occurred when the ureter of the other side was suddenly obstructed. The urine is often entirely normal in congenital hydronephrosis. Constitutional symptoms and local pain are absent as far as can be ascertained.

This condition has been mistaken for sarcoma of the kidneys. Sarcoma was thought of in my cases, but decided against on account of the good condition of the babies and good character of the urine. Double hydronephrosis often presents the appearance of tubercular peritonitis. Ascites is also suggested by the uniform swelling of the abdomen and fluctuating character of the growth. A positive recognition of hydronephrosis is often possible only when a fluctuating tumor is present. But the abdomen is often so tense and hard, as it was in both these cases, that fluctuation cannot be recognized. Aspiration of the fluid will usually settle the doubts as to the nature of the swelling, for it is free from blood and pus, and commonly contains urinary constituents.

Congenital hydronephrosis due to atresia of some part of the urinary passages may cause the death of the fetus *in utero*. The

course and termination of this disease is rapid and fatal. One of my cases was 26 days old and the other 6 weeks. Death results from uremia or some complication. Holt states that six of the cases observed by him died before 6 months, and two before 2 years. In only three was a cause found to explain the deformity; four died of marasmus, two of broncho-pneumonia and one of ileocolitis.

No treatment is of any avail in cases of true congenital hydronephrosis.

Case 1 was a white male infant, 26 days old; family history good. There was some difficulty with the delivery of the abdomen during labor. The child did not gain in weight but never appeared sick. It was breast fed. It had some difficulty in urinating during the first few days, but small doses of sweet spirit of nitre had a good effect and the urine was passed freely until August 19 (1902), when it was only passed once, and only once on the 20th. From the 14th to the 20th the bowels moved from 6 to 8 times daily. About midnight of the 20th the baby had pains in the abdomen and refused to nurse. The abdomen, which had been very large since birth, became much more distended. The veins over the abdomen were very large. It cried very little, but straightened and stiffened the legs as if in pain. High rectal injections brought away some gas and yellow mucus. During the night it vomited milk and occasionally eructated gas. The abdomen became hard and tense and distention more marked. The next morning the baby was catheterized and 10 ounces of clear, yellow urine withdrawn; sp. gr. 1003; alkaline and free from albumen. Dr. J. Ford Thompson was called in consultation, and advised an operation, which was performed about 11 A. M. A large amount of urine was found in the bladder. The child died three hours after the operation.

Autopsy.—Abdomen markedly distended and veins enlarged. Intestines distended with gas. About one foot of the ileum deeply congested, and with many dark, nearly circular areas; mucous membrane much inflamed and showed numerous small ulcers with bases in the muscularis. Both kidneys about $2\frac{1}{2}$ inches in length and 2 inches wide, nodular on the surface with much dilated pelves. Both showed congenital hydronephrosis, the kidney substance being thin. Cystic cavities found along the course of both ureters. Bladder three inches in length, walls $\frac{1}{8}$ of an inch in thickness and very firm.

Case 2. C. F., white male infant, age, 6 weeks, was admitted to Children's Hospital, Washington, August 31, 1902. Parents healthy, labor normal, infant breast fed; was born with distended abdomen which has progressively increased in size. Has

vomited its milk since one week old. Bowels moved once or twice a day. Urine voided regularly and in sufficient quantity until August 27, since which but little has been passed.

When admitted was fairly well developed. Abdomen greatly distended; skin tense and glistening; superficial veins of lower limbs and abdomen intensely engorged; feet, legs and arms cold and cyanosed, becoming warm on application of external heat, but the cyanosis remained; bowels open; urine voided in sufficient quantity 12 hours after admission; took nourishment fairly well, but vomited most of it immediately afterward.

Sept. 2, 11 A. M., an exploratory laparotomy by Dr. J. Ford Thompson disclosed the abdominal cavity filled with straw-colored fluid; left kidney greatly enlarged and ureters distended; exact cause of distention not discovered at that time. Intestines so distended with gas that it was necessary to puncture them in several places before they could be replaced. The child reacted well from the operation; at 7 P. M. vomited about two ounces of dark blood and at 7.30 respiration ceased.

August 31, temperature 98, 99.2, 96.4. September 1, temperature 98.2, 98.6; pulse 142; respiration 48. September 2, temperature 98.5, 96.6, 102.2; pulse 132, 120; respiration 60, 82.

The *necropsy* showed the bladder walls very much thickened, and the bladder filled, but not distended, with urine. Both ureters greatly dilated and filled with urine. Right kidney of normal size, pelvis slightly distended. The left kidney was represented by a cyst about two and a-half times the size of the right kidney; the capsule of the kidney was filled with urine, inside of which was seen the remains of kidney substance, about one-fifth the normal size. Heart slightly enlarged, lungs congested, other organs normal.

DISCUSSION.

Dr. J. Ford Thompson recalled the first case of congenital hydronephrosis on which he had operated. He first saw the patient at Garfield Hospital; although 10 ounces of urine had just been drawn off by catheter, the child's abdomen was so enormously distended that it looked as if its extremities had been attached to a large ball. Diagnosis was not made, as it was impossible to make one in these cases. The question of operation came up, but he was not inclined to interfere. The mother desired it, however, and as an exploratory incision held out a slight promise of relief he made one, in the hope that the conditions found might enable him to save the infant's life. It seemed possible that there might be in the abdomen a large cyst: if this were so, it could be evacuated, the edges of the incision in the sac stitched to the abdominal wall, and the child's life might thus be saved. The usual laparotomy incision was made in the neigh-

borhood of the umbilicus; it was followed by a gush of fluid directly from the bladder, which extended up to the ensiform cartilage. The bowels, too, were greatly distended, and this and the fulness of the bladder caused the abdominal distention; it was not due to the hydronephrosis as the sac was very small. The cause of the hydronephrosis was not discovered.

The second case was similar to the first, but there was even more distention; it was caused by the condition of the bladder and bowels. Here, also, the cause of the hydronephrosis could not be ascertained.

Little surgically can be done for congenital hydronephrosis. Aspiration is useless. It is impossible to make a diagnosis in cases like the above. Exploratory incision should not be done unless some benefit can reasonably be expected from it.

Dr. D. S. Lamb said that the specimen which was brought to him showed, as it does now, a distinct enlargement of the verumontanum; logically, therefore, he supposed that this was the cause of the hydronephrosis. The history, however, did not seem to bear out this opinion, and the cause was therefore still in doubt. In both cases, however, the obstruction must have been situated in the urethra.

Dr. Bovée said that the distention of the kidney in these cases was important, but often misleading. Distention of the kidney alone was due to an obstruction situated in the kidney or upper end of the ureter; distention of both kidneys and ureters to trouble in the bladder or lower end of the ureter; and when the bladder was also distended, the obstruction should be sought in the urethra. Hence the term "hydronephrosis" was not applicable to these cases, as other structures than the kidneys were sometimes involved. If the cases were seen early enough much might be accomplished by operation. Nephrectomy was unjustifiable unless there was proof that the function of the affected kidney was absolutely abolished and the organ was causing injury. It was best at the first operation to relieve the obstruction, open and evacuate the sac, and determine whether the function of the kidney had been abolished, and, if necessary, at another time to perform a radical operation. The extra-peritoneal operation was preferable unless there were special reasons for choosing an incision in the anterior abdominal wall.

Dr. Thompson differed with Dr. Bovée as to the benefit which could be derived from surgical interference in these cases, no matter how early the patient was seen. The method which he had suggested was impracticable in the cases reported by Dr. Acker; the only thing which could have been done was to open the bladder and stitch the edges to the abdominal wall; this procedure held out a bare promise of success. In the two cases which Dr. Thompson had reported no operation would have availed, as the cause of the obstruction was not found.

Dr. Borden asked Dr. Acker whether in his cases there was a free flow of urine.

Dr. Acker replied that he did not know whether the urine which was voided was a "free flow" or an overflow.

Dr. Borden thought that the seat of obstruction in Dr. Acker's cases was in the urethra at the neck of the bladder. The fact that a catheter was passed did not militate against this belief. In illustration of this fact he cited a case in which a woman was unable to urinate after delivery. There was great abdominal distention and a constant dribbling of urine. Pints of urine were drawn off by catheter; nevertheless, the dysuria was due to trouble at the junction of bladder and urethra, and was caused primarily by over-distention of the bladder.

Dr. J. Taber Johnson related a case in which he observed hydro-nephrosis in a fetus at the sixth or seventh month. The distention was so great as to necessitate premature delivery. Dr. Lamb performed an autopsy, and reported that the distention was caused by urine.

Dr. Acker, in closing the discussion, said that he did not believe that a surgeon could have done anything in his cases even if he had seen the infants at the first day of life. He believed that in the case reported from Garfield Hospital the obstruction was situated at the point where the ureters enter the bladder. The flow of urine in these cases was often an overflow.

CASE OF ABSCESS OF BRAIN.*

By D. PERCY HICKLING, M. D.,

Washington, D. C.

The specimen consisted of the left cerebral hemisphere lacking the outer part of the temporal lobe; the related pons and medulla were also wanting. A portion of the dura had been retained to show the oval opening, 2.5 inches in sagittal diameter and 1.5 inches in coronal diameter, situated over the superior frontal, upper part of Rolandic and upper parietal convolutions. To the outer edge of this opening was attached the thick pedicle of an oval mass 1.5 inches in long diameter with thick capsule and soft, whitish contents much like inspissated pus. A mass of partly softened brain substance, including parts of the convolutions named, and also the marginal convolution, projected through the opening. The callosum, fornix, thalamus and striatum were very

* Reported to the Medical Society of the District of Columbia, November 12, 1902.

soft and friable. A thick, firm, dark clot was spread over the upper parietal convolution.

H. D., a colored man, age 28, was admitted to the Washington Asylum Hospital August 1, 1901, with the following history : On or about July 1 he had received a blow on the left side of the head over the motor area, lacerating the scalp and fracturing both tables of the skull. The wound had been made with a wagon-pin, and he probably received no treatment until a week later, when he *walked* into the Emergency Hospital. The wound at that time was badly infected. The loose fragments of bone were removed and the wound dressed, but suppuration continued (so Dr. Hickling was informed) for about two weeks after his admission. His right arm and leg were paralyzed, but this condition rapidly improved, so that when he was admitted to the Asylum Hospital he was in a fairly good condition, weighing about 165 pounds; pulse 74. temperature 98.6, respiration 20, appetite good, tongue slightly coated, urine normal; lungs, liver and heart normal; there was partial paralysis of right arm and leg, but he was able to walk around the ward. He remained in this condition until September 4, when he suddenly lost consciousness; this lasted but a short time, and during the next 12 hours he had two convulsions; after the first convulsion he again became unconscious and remained so until the morning of September 6. On the evening of September 5 the doctor made an incision about $2\frac{1}{4}$ inches long along the line of the cicatrix of the old wound and found a pus-cavity containing about 4 drachms of pus; this was drained, irrigated, the walls carefully scraped with a sharp spoon curette, partially closed with silk-worm-gut sutures and drained with iodoform gauze. The discharge continued for about three weeks, and then the wound seemed to completely heal. After the operation the temperature rose to 102 but fell to 99.2 next morning. The second day after the operation the temperature fell to normal, and remained so throughout the process of healing. Consciousness returned 15 hours after the operation. October 15 his general condition was very good, the wound of the head had entirely healed, and, while the hemiplegia was greater than before the operation, the patient could use his hand in dressing himself and could walk, though with some difficulty.

His condition continued improving slightly until April, 1902, when he began to act in an erratic manner, at times became excited, and had two convulsions which were very slight and brief in their duration. During each convulsion there was noticed over the site of the fracture a pronounced swelling, which was almost fluctuating in character, projected fully half an inch above the ordinary level, and produced decided symptoms of compression. The latter part of May he again became comatose, had several slight convulsive movements in the paralyzed muscles, irregular

pupils and stertorous breathing and some elevation in temperature. The doctor opened up the old wound and found an abscess cavity larger than before, which he treated in the same manner. During the operation, however, he found considerable hemorrhage, to control which he was compelled to pack the wound. After this operation the patient did not seem to improve, and even after the packing was removed continued in a semi-comatose condition, and died June 28, 1902. All the organs with the exception of the brain were found in a normal condition, and on removing the specimen a second abscess cavity, which had not apparently been drained, was found below the one which had been evacuated.

Dr. Vaughan said that he saw this patient at the Emergency Hospital. As he remembered the case, the man was a big, strong negro, who had been injured a week before. History indefinite. He was limping at the time, there being a slight paralysis of the right side. He found a compound, comminuted fracture of the left side of the skull. The depressed bone was raised; the wound was closed with drainage and it healed kindly. The man made a good recovery, but the hemiplegia remained. He was then transferred to the Asylum Hospital.

The case was interesting as showing how often an operation in these cases failed in spite of our best efforts. The abscesses were due to the original infection. Dr. Hickling had done all that was possible to effect a cure.

Dr. D. S. Lamb explained that some appearances which the specimen presented were due to *post mortem* changes. This was true of the softening in certain places, and of a projection above the dura. The latter was due to the way the specimen had been placed in the jar, and the peculiar shape of the brain was due to the same cause. The pediculated mass attached to the dura was interesting; it was apparently an encapsulated abscess.

RESOLUTIONS ON THE DEATH OF DR. JOHN T. WINTER.*

WHEREAS, in the dispensations of an all-wise Providence, DR. JOHN T. WINTER, an esteemed man and physician, has been suddenly called from our midst,

Resolved, therefore, That in his death we have lost a most worthy and valuable member of our profession, his family a kind and affectionate husband and father, and the community not only a skillful and successful physician, but a man who was

* Adopted by the Medical Society of the District of Columbia, October 22, 1902.

endeared to all who knew him, on account of his acts of charity and his principles of temperance and morality.

Resolved, That while we shall greatly miss him and be deprived of his wise counsel and friendly greetings, yet we feel that our loss is his gain.

Resolved, That while we deeply and sincerely sympathize with his bereaved family, we can only offer our condolence and send them a copy of our resolutions, which but feebly express our love for our friend.

H. H. BARKER,
G. WYTHE COOK,
THOMAS C. SMITH,
D. OLIN LEECH,
N. P. BARNES,
Committee.



Dr. Barker said : Dr. John Thomas Winter, son of Thomas and Elizabeth (Fortney) Winter, grandson of Benjamin Winter, was born, April 26, 1842, at Petersville, Frederick Co., Maryland.

He was educated at the academy of his native village. In the summer of 1861 he entered the Quartermaster's Department, U. S. A., and was stationed at Washington, D. C., during the greater part of the Civil War. In 1867 he began the study of medicine, taking a three years' course in the Medical Department of the Georgetown University, Washington, D. C., from which institution he was graduated, March 11, 1870.

October 20, 1869, while still a medical student, he married Miss Alphonsa R. Hirst, daughter of the late Reverend William Hirst, who was at one time stationed at the Foundry M. E. Church in this city. His widow and four children survive him.

Soon after his marriage, with the prudence and forethought so characteristic of him, he undertook the purchase of a home. Having incurred this obligation only a few months before his graduation, he did not deem it prudent to at once give up his position and depend on the uncertain income of a young doctor. Soon, however, he found himself in a position to take this step, and about one year after his graduation he resigned his office and engaged actively in the practice of medicine until three weeks before his death.

During the thirty years of his professional life he was connected with many medical, scientific, benevolent and other organizations. He was a member of this Society, and from 1889 to 1897 was one of the Censors. In 1891 he was Vice-President. He was also a member of the Medical Association of the District of Columbia, the American Medical Association, Washington Obstetrical and Gynecological Society and the National Geographic Society.

He was a charter member and for two years president of the Washington Therapeutic Society, and a charter member and one of the standing committee of the American Therapeutic Society. He was also one of the Commissioners of Pharmacy of Washington, and president of that organization from March 13, 1894, until his death. He had long been connected with the Eastern Dispensary, first as one of the attending staff, and afterward, until his death, as a member of the Consulting Board. He was Consulting Physician to the Methodist Home for Aged Women, and formerly one of the attending staff at Sibley Memorial Hospital. He was a member of the Committee on Public Health, and the Committee on Universities of the Board of Trade. He was a 32d degree Mason and a member of several other fraternal organizations.

In the summer of 1884 he was invited by the Board of Regents of the National University to organize a Medical Department in connection with that institution. He accepted the invitation, and engaged at once in the work with such success that in October of the same year the school was opened with the following faculty: Drs. J. T. Winter, S. S. Adams, G. W. Cook, T. E. McArdle, G. W. West, Joseph Morrison, H. H. Barker. Dr. Winter was

elected president of the school, which position he held until his death. From 1884 until 1892 he was Professor of Materia Medica and Therapeutics, and from 1892 until May, 1902, one month before his death, he was Professor of Theory and Practice of Medicine. In May, 1902, he was compelled, on account of the condition of his health, to resign this position, and he was thereupon elected Emeritus Professor of Theory and Practice.

Dr. Winter's contributions to medical literature include the following papers: "The Advance in Therapeutics during 1888-9," "Erysipelas," "Therapeutics of Puerperal Eclampsia," "Puerperal Peritonitis," "Jaundice during Pregnancy," "Extra-Uterine Pregnancy," "Croup," "Phlegmasia Dolens," "Absence of the Bladder," "How Shall We Feed the Baby?" "What is the Cause of Puerperal Fever?"

It has been my fortune to have known Dr. Winter from his youth until his death, and to have been with him during his last illness up to within four days of its termination. I have seen him under almost all conditions of life—when a medical student, when a recently graduated doctor, poor and without patients; when a successful physician with a large and lucrative business, in difficult and dangerous cases, upon joyful and festive occasions in his home and elsewhere, and at the bedside of his dying child. At all times and on all occasions, in defeat and in success, in health and in sickness, in joy and in sorrow, he was always the same kind, gentle, loving, hopeful Christian.

For 18 years I was closely associated with him in school work. He felt great pride and took a deep interest in the institution, and labored hard in all his relations to the school and faculty to advance and elevate the institution and to secure for the students a thorough medical education. As a member of the faculty he displayed great business talent, and as a teacher he was most thorough and conscientious. His kindly interest in and encouraging, helpful manner toward the students endeared him to all of them. He was so thoroughly impressed with the sacredness of his responsibility to the school and the students that nothing but the most exacting professional engagements ever caused him to miss a lecture. In his attendance upon the school, as in his ministrations to his patients, no considerations of his own convenience or his state of health ever interfered with his efforts to thoroughly perform his duty. During the later years of his life he frequently left his bed when ill and delivered his lectures, sometimes scarcely able to speak on account of asthma.

As a physician he was kind and sympathetic. Always bright and cheerful, he carried sunlight into every sickroom he entered, and at once gained and always retained the love of his patients. It is well it was so, because for them he sacrificed his life.

He was charitable, not only in that he gave his services freely and gratuitously to the poor, but in that he was lenient in his

judgment of the wrong doings of others, and forgiving to those who injured him. Charitable in the highest sense of the word because he loved his fellow-man. He was conservative in that he was not hasty to make radical changes in remedies or methods, yet he was progressive. He examined new remedies and methods carefully and thoroughly, and when convinced of their utility, and not until then, he adopted the new and laid aside the old. He was a useful citizen, active in the causes of religion and temperance and all measures tending to promote the prosperity of the city, and the health and welfare of the community.

He was an unobtrusive Christian. All who knew him felt that he was this, not because he said so, but because they learned it from his pure, consistent life.

Dr. D. Olin Leech said: Mr. President and members: As a member of the committee on resolutions and memoir on the death of our late associate, Dr. Winter, I have been asked to speak of his connection with the Eastern Dispensary and Casualty Hospital. Dr. Winter was one of the original incorporators, becoming identified with the institution at its organization, January 16, 1888.

He was invited to take charge of the Clinic of General and Nervous Diseases, which position he filled from that date until December 5, 1898, when, owing to his increasing cares and poor health, he tendered his resignation as an active member of the Attending Staff. He was immediately elected a non-medical Director, and as Consultant to the Clinic of General and Nervous Diseases, which offices he held until his death. He was President of the Medical Staff from 1893 to 1896.

Dr. Winter was a faithful and energetic worker. His interest in the welfare of the institution was great. During the early days of the Dispensary he rarely missed a clinic day. Many times, in the cold blasts of winter and intense heat of summer, when, if he had consulted his own feelings he would have been resting at home (for he was a great sufferer from asthma), he would be found at his post of duty, ministering to the relief of the suffering poor. He will be greatly missed by his associates in the meetings of the Board of Directors, where his counsel was always respected.

And I now desire to add a few personal remarks in regard to our departed friend. It was my privilege to become associated with Dr. Winter in the spring of 1888, as his assistant on the service of General and Nervous Diseases at the Eastern Dispensary, soon after its organization. This association lasted until 1894, when I was assigned to the Clinic on Diseases of Children. I then became better acquainted with him, meeting him often in Board and Staff gatherings. In 1892 I selected him as my family physician, and during several times of critical illness, as he came and went from my home, I learned to respect and love him more and more. He was so kind, gentle and sympathetic. His friendship helped me in the early part of my professional life, the time when the friend-

ship of an older man is especially appreciated. I often sought his advice and always found it helpful.

Dr. Winter was in active practice from the time of his graduation, March 11, 1870, until his death, June 22, of this year. His constituency steadily increased. His manner was sympathetic, his fidelity great; hence, the circle of his friends and of those who loved him enlarged with each succeeding year. It included high and low, the well-to-do and the humble, the intelligent and those of little culture. The great throng that attended his funeral service, far beyond the accommodation of his capacious residence, was a striking testimony of the esteem in which he was held. Prominent clergymen were there, not merely those officiating, but those who came to mourn him. Many of our leading practitioners and of our younger medical men were present. And then there were large numbers of those to whom he had ministered, according to his best ability, in time of sickness. Every one gave evidence that he had lost a personal friend. I have rarely seen a more general evidence of sincere grief than was manifest on that occasion. Dr. Winter was not only a hard worker but a conscientious one. He rarely took a vacation. Had he done so he might, perhaps, be with us and in full practice to-day. He was honest in his convictions and fearless in acting on them. He was thoroughly devoted to his profession. There can be hardly a doubt that the cause of his break-down was too great devotion to his chosen calling and to the varied interests which had come to rest on his mind in connection with the same. Had he taken an occasional rest, throwing off for awhile his many burdens and caring for his own health, he would still be going in and out among us.

We will miss him greatly; but, more than that, it is impossible to feel other than that a real and great loss has come both to the profession and to his patients and friends in his sudden taking off.

We should learn some lessons as to the care of our own strength and health from the untimely departure of our brother. We may well seek, also, to follow him in his Christian life, so conspicuous in its devotion to duty and to the service of his fellow men. Said the Great Physician: "If any man desire to be *first*, the same shall be *last* of all, and servant of all."

Dr. T. C. Smith said that nothing was too good to be said of Dr. Winter. He was a safe physician and an upright and honest gentleman. He was always courteous, and was one to whom the interests and honor of the medical profession could well be intrusted. All would most deeply regret his loss.

Dr. Reyburn said that Dr. Winter had attended his clinics in his student days, and he had known him ever since. He was generous and noble; nothing was too good to be said of him, and it could well be said that "None knew him but to love him, none named him but to praise."

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE
DISTRICT OF COLUMBIA.

Wednesday, October 1, 1902.—The President, Dr. S. S. Adams, in the Chair. Over 47 members present.

The President opened the session with appropriate remarks, and announced with regret the death of Dr. John T. Winter, which had occurred during the recess.

The following candidates were elected to active membership :

- C. G. Anderson, College Physicians and Surgeons, N. Y., 1884.
William J. Armstrong, Georgetown University, 1870.
G. K. Baier, Columbian University, 1898.
Charles A. Ball, Columbian University, 1877.
Howard W. Barker, National University, 1901.
Richard Scott Blackburn, University of Virginia, 1898.
M. Bruckheimer, Columbian University, 1868.
G. C. Burton, Louisville Medical College, 1881.
Albert J. Carrico, University of Maryland, 1896.
Enrico Castelli, Bologna, Italy, 1897.
DeWitt C. Chadwick, Columbian University, 1895.
P. S. Chancellor, College Physicians and Surgeons, Balto., 1901.
Thomas J. Chew, University of Maryland, 1868.
Edgar P. Copeland, Columbian University, 1900.
John S. Dorsey, College Physicians and Surgeons, Balto., 1890.
Raphael B. Durfee, Georgetown University, 1900.
Charles M. Emmons, Georgetown University, 1893.
R. R. Farquhar, University of Pennsylvania, 1899.
Howard Fisher, Jefferson Medical College, 1895.
Neil Duncan Graham, Johns Hopkins Medical School, 1901.
Robert H. Graham, Columbus and Starling Medical College,
1879.
Thomas S. D. Grasty, Columbian University, 1901.
Thomas A. Groover, Columbian University, 1898.
John Paul Gunion, Columbian University, 1899.
William C. Gwynn, Georgetown University, 1898.
Montgomery Hunter, Columbian University, 1896.
William A. Jack, Jr., Howard University, 1896.
Charles H. James, Jr., Columbian University, 1897.
Loren B. T. Johnson, Georgetown University, 1900.
Walter P. Keene, Georgetown University, 1900.
C. S. Keyser, Columbian University, 1898.
Thomas Best Kramer, Howard University, 1887.
L. Fleet Luckett, Columbian University, 1895.
Camillo H. Machinek, Howard University, 1893.
Edith L. Maddren, National University, 1899.
Elijah L. Mason, Columbian University, 1901.
Samuel W. Mellott, Howard University, 1897.
G. Brown Miller, University of Virginia, 1890.

Francis H. Miner, Georgetown University, 1895.
Murray Galt Motter, University of Pennsylvania, 1890.
William S. Newell, Columbian University, 1895.
John Alphonso O'Donoghue, Georgetown University, 1900.
Alfred V. Parsons, University of Maryland, 1889.
Charles Volney Petteys, Georgetown University, 1873.
William P. Reeves, Georgetown University, 1899.
L. H. Reichelderfer, Columbian University, 1899.
F. F. Repetti, Georgetown University, 1895.
J. J. Richardson, University of Maryland, 1889.
J. Lewis Riggles, Columbian University, 1900.
E. G. Seibert, Columbian University, 1893.
Jesse Shoup, Jefferson Medical College, 1891.
B. F. Tiefenthaler, Columbian University, 1899.
Louis A. Walker, Georgetown University, 1898.
Joseph S. Wall, Georgetown University, 1897.
Chas. S. White, Columbian University, 1898.

Dr. Cook spoke of the difficulty experienced in obtaining necessary information concerning candidates for membership, and suggested that it would be well for candidates to furnish with their applications the names of two or three members to whom the Board might refer if they so desire.

In connection with one of the candidates, the Treasurer inquired whether an applicant who had once been a member of the Society, and had therefore paid the initiation fee once, should be required to pay a second fee when reinstated. The Chair ruled that inasmuch as the constitution contained no provision which covered this point, the candidate would have to pay a second fee.

The Chair appointed the following committee on the death of Dr. John T. Winter : Drs. Barker, Cook, Barnes, D. Olin Leech and T. C. Smith.

The Treasurer's report for the three months ending September 30, showed receipts \$95.71, and disbursements \$174.74. The Society voted to omit the next two regular meetings.

The Treasurer read a communication from the American Security and Trust Co. with reference to the note which had been given to the Society by Mr. Norton in return for a loan of \$1,000 ; the Company stated that Mr. Norton wished to take up the note, and they desired its surrender. The Treasurer was instructed to surrender the note, and the matter of reinvestment of the fund was referred to the Executive Committee.

An appropriation of \$82.30, was made to meet expenses incurred in the publication of the ANNALS.

Dr. Balloch read the paper of the evening, " Personality as a Factor in Medical Education." Discussed by Drs. J. Taber Johnson, D. S. Lamb, Neff, E. L. Morgan and S. S. Adams. See page 331.

Wednesday, October 22, 1902.—The President, Dr. S. S. Adams, in the Chair. Over 80 members present.

Dr. H. H. Barker, for the Committee on the Death of Dr. John T. Winter, made a report which was adopted. Memorial addresses were made by Drs. D. Olin Leech, T. C. Smith and Reyburn. See page 387.

Dr. Magruder, for the Executive Committee, reported that he had ascertained from Col. Miller that the work on the proposed filtration plant was proceeding satisfactorily. The object was to have the plant modern and up-to-date in every particular and the plans were being perfected as rapidly as possible with this end in view. The specifications would be completed at an early date, and as soon as practicable thereafter bids would be received. Filtered water would probably be supplied within two years after the commencement of construction.

Drs. J. Taber Johnson and Reyburn presented a case and specimen of "Extra-uterine Pregnancy." Discussed by Dr. Bovée. See page 352.

Dr. Borden, Surgeon U. S. Army, read a paper on "Stricture of the Oesophagus. Operation by Abbey's Method," and presented a patient on whom the operation had been performed. Discussed by Drs. A. F. A. King and J. Ford Thompson. See page 376.

Dr. Acker read the monthly essay, "Congenital Hydronephrosis." Discussed by Drs. J. Ford Thompson, D. S. Lamb, Bovée, Borden and J. Taber Johnson. See page 380.

Wednesday, October 29, 1902.—The President, Dr. S. S. Adams, in the Chair. Over 69 members present.

The resignation of Dr. Albert S. Maddox from membership was accepted.

The following cases and specimens were presented :

By Dr. Reisinger: "Aneurism of Abdominal Aorta." Discussed by Drs. J. D. Morgan, Vaughan, Acker and D. S. Lamb. See page 354.

By Dr. Hickling: "Fibroma of Uterus." Discussed by Drs. Bovée, Reyburn, Vaughan and A. F. A. King. To be published.

Dr. Shands read the paper of the evening, "The Treatment of Weak Feet and Flat Feet." Discussed by Drs. Nichols and J. Ford Thompson. See page 343.

Wednesday, November 5, 1902.—The President, Dr. S. S. Adams, in the Chair. Over 60 members and visitors present.

Dr. Kleinschmidt, for the Committee on History of the Society, reported progress. In answer to a question as to the insertion of certain data, the Chair requested the Committee to prepare a brief outline of the subjects to be considered in the publication, and present it for the endorsement of the Society.

The Chair stated that in choosing the essayists for the coming year he had invited each medical society in the District to appoint an essayist and alternate, and he would make out the list from the names presented. In this way he hoped to bring the smaller societies in touch with this Society. The method was a new one, and he hoped that the Society would approve his action. The Society endorsed the course pursued by the President.

The Chair stated that he had received requests from the army and navy medical schools here asking that their students be allowed to attend the meetings of this Society as guests. He believed that it was best to invite them to attend, and there being no objection, he requested the Corresponding Secretary to extend invitations to the students through the deans of their respective schools.

Dr. B. L. Hardin read a paper on "Chronic Pancreatitis," and Dr. I. S. Stone, one on "Chronic Interstitial Pancreatitis." They were discussed by Drs. Claytor, Nichols, Vincent, Kleinschmidt, Behrend and J. D. Morgan. See pages 357 and 365.

Wednesday, November 12, 1902.—The President, Dr. S. S. Adams, in the Chair. Over 87 members present.

The Treasurer reported for October, 1902, received from assessments, \$548.00; entrance fees, \$185.00; interest on \$1,000, \$30.00; total, \$763.00. Disbursed for postage, \$10.00; binding transactions, \$1.25; Recording Secretary, \$51.91; Medical Annals, \$82.30; printing, \$3.00; total, \$148.46.

The following cases and specimens were presented:

By Dr. Hickling: "Abscess of the Brain." Discussed by Drs. Vaughan and D. S. Lamb. See page 385.

By Dr. Kelley: "Myocarditis." To be published.

Dr. G. Wythe Cook read the monthly essay, "The Treatment of Typhoid Fever." Discussed by Drs. Ruffin, G. B. Miller, Behrend, Yarrow, J. Dudley Morgan, Reyburn, S. S. Adams, T. C. Smith, Bruckheimer, Roy, J. Ford Thompson and Chappell. To be published.

Medical Miscellany.

The Washington Asylum Hospital.—**TYPHOID FEVER.**—During the last five months I have had 11 cases under treatment ranging from 18 to 26 years of age; 4 were white and 7 colored, 9 male and 2 female; the highest temperature reached varied from 102 to 104.8; all were discharged cured. Forty-four days was the average time in hospital. The routine treatment given consisted of 3 grains of guaiacol carb., 1 grain of thymol and $\frac{1}{60}$ grain of strychnia every four hours; 6 ounces of liquid nourishment every two hours while awake; stools and urine, of course, disinfected; a sponge bath when the temperature was 102.2 or more, and ice caps to the head for headache or delirium; a simple enema every second day when required. The strychnia was increased when necessary; no alcohol used in the treatment of any of these cases. During convalescence, iron, quinine and strychnine or phosphatic emulsion was given. When it is considered that most of these cases were admitted after the onset of the fever and that no previous medical attention had been received, I consider the result as very satisfactory, and I attribute it to the medical as well as the hydro-therapeutic treatment, feeling confident that when different methods of treatment were used the results were less satisfactory.—D. PERCY HICKLING.

U. S. Fish Commission.—**HEMOGLOBIN ESTIMATIONS AND BLOOD COUNTS IN FISHES.**—During the past summer a considerable number of observations were made on the hemoglobin and the number of red blood corpuscles of brook and rainbow trout. Apparently normal trout of each species varied in both these respects, widely in hemoglobin and to a less extent in the number of corpuscles, so that the only norm established is an average of individuals taken at random and not evidently abnormal. The condition of the fish with respect to factors, such as the ingestion of food, which may affect the observations, could not be readily controlled and may account in part for the variations in the readings. The wild trout were from the Au Sable River in Michigan, and the hook wounds incident to their capture lowered the hemoglobin readings, presumably by absorption of water or lymph following hemorrhage, for which reason the figures given are probably somewhat low. Excluding this error as far as possible by throwing out the individuals which had received the more serious injuries, the hemoglobin readings on thirty-five specimens of the brook trout (*Salvelinus fontinalis*)

average 43.7, referred to 100 as the normal human blood standard. The readings, however, varied from 33 to 59, while 74 per cent. of them fell between 38 and 50. The blood of domesticated brook trout was poorer in hemoglobin, twenty readings on as many individuals averaging 35. The erythrocytes of the wild brook trout number about one million per cubic millimeter, and the domesticated fish about the same, the average being for counts on five and ten individuals, respectively, 1,074,000 and 1,085,000. The reduction of hemoglobin due to domestication seems not to be at the expense of the number of corpuscles but of their hemoglobin content. Marked anemia in an individual trout, however, was expressed, in every case observed, in both the hemoglobin reading and blood count.

Two individuals of wild rainbow trout (*Salmo irideus*) read 90 and 94 for hemoglobin. Nineteen domesticated rainbows averaged 54, the readings covering a wide range, from 31 to 83. The blood corpuscles were counted in but one wild individual, which showed 1,830,000 per cubic millimeter. Eleven domesticated rainbows averaged 1,487,000, none showing less than one million, while they ranged from that point up to the count for the wild individual.

The chief interest in these observations lies in two facts established by them. While the normal variation in the hemoglobin of presumably healthy trout, among a number of individuals, is great, and the figures overlap for the two species examined, it is evident that the rainbow trout has a much higher percentage of hemoglobin than the brook trout; and further, that domesticated trout, whether rainbow or brook, have their blood poorer in hemoglobin than the wild trout of the natural waters. These facts correlate suggestively with the freedom of wild fish in general from diseases of domestication, and with the practical immunity of domesticated rainbows to a bacterial disease (due to *Bacterium truttae*) which attacks domesticated brook trout under the same conditions, and which has never been reported in wild fish. The instruments used were the Thoma-Zeiss hemocytometer and the Dare hemoglobinometer.

M. C. MARSH.

Providence Hospital.—The new building, which was only lately begun, is now nearing completion, possibly will be open for use in the early part of 1903. It will be used mainly for female patients in wards provided for. The building will be equipped with every modern convenience.

The nurses' home and power house recently completed is now in use, the upper floors being divided into several rooms and small dormitories and the ground floor will be used as reception rooms, and part of it separated as a laundry and drying room. The cellar is occupied by the power plant, which is intended to furnish heat and light for all the hospital buildings.

An accident reception ward has recently been fitted up in the hospital building where cases demanding immediate attention can be looked after before being transferred to the various departments of the hospital.

The training school for nurses has begun its program for the session, the number of pupils in the school is quite large and many applicants have been turned away for want of room.

T. N. VINCENT.

Washington Post-Graduate Medical School.—Believing that the National Capital presents many special advantages for post-graduate medical instruction, the leading members of the medical profession in the City of Washington have organized a Post-Graduate Medical School. The course of instruction will consist principally of clinics at the different hospitals in the city, and of practical laboratory work in bacteriology, sanitary chemistry and clinical microscopy. One or two didactic lectures will also be given daily on such subjects as preventive medicine, military medicine and surgery, preventive inoculations, serum therapy, etc. It is believed that the course of instruction will be especially valuable for physicians who contemplate entering one of the branches of the public service. For such as desire it, advice will be given with reference to conditions of admission to the Army, the Navy and the Marine Hospital Service, and quiz classes will be arranged to prepare them for the examination.

For the general practitioner, the clinical instruction at the various hospitals in the City of Washington will be the most attractive and valuable feature of the course.

It is the intention to make the scientific part of the course unusually thorough and comprehensive, and it is doubtful whether any other city in the United States can offer superior advantages in this direction. Indeed, it is hoped that in the not distant future, American physicians will find it unnecessary to go abroad for post-graduate instruction in these branches. They certainly need not cross the ocean to obtain the best instruction in the most successful methods of operative surgery and clinical medicine.

The special attention given to preventive medicine and to laboratory work in bacteriology and sanitary chemistry will afford public health officers unusual advantages for perfecting themselves in the scientific studies which must serve as a foundation for their practical work.

It will be noticed that the list of professors includes the names of several physicians connected with different branches of the Government service. Some of these are scientific specialists who have a world-wide reputation for their research work in the several branches to which they have devoted themselves.

Graduates in medicine only will be admitted to this school.

The headquarters of the school for the present will be at the

Emergency Hospital, 15th Street and Ohio Avenue, where students may register between the hours of 10 and 12 a. m. on and after January 7, 1903.

General Geo. M. Sternberg is President, Dr. Geo. M. Kober, Secretary.

Editorial.

ADVERTISEMENTS AND SUBSCRIPTIONS.

The Editorial Committee would be pleased to have the members of the Society interest themselves (as some have already done) in procuring advertisements and subscriptions. Dr. Jackson has charge of advertisements, and will furnish any desired information. Dr. Wells has charge of subscriptions; the rate is one dollar a year, postage paid.

The Committee would especially bespeak for the advertisers the patronage of members, other things, of course, being equal.

Journals which exchange with the ANNALS are requested to send to the publication office, 618 F Street, N. W.

WASHINGTON MEDICAL ANNALS

THE TREATMENT OF TYPHOID FEVER.*

By G. WYTHE COOK, M. D., LL. D.,

Washington, D. C.

Typhoid fever is perennial among us, so I deem it not inopportune to bring the subject of its treatment before the Society at this period of its defervescence, that in any discussion that may be elicited, the various experiences of different ones may be stated, and methods and results compared, so that all of us may gain at least a modicum of profit from the individual views and opinions expressed.

However fascinating and instructive it might be, it is not desirable nor necessary for the purposes of this paper to go into the history of typhoid fever, but it is essential for its proper discussion to consider its etiology and pathology, and to take account of the concomitant symptoms of the disease.

The investigations of competent bacteriologists have shown that a special micro-organism, the *bacillus typhosus*, is constantly present in typhoid fever. It is found in the lymphoid structures of the intestines, in the mesenteric glands, in the liver, spleen and other organs. It gains entrance to the body principally through the digestive tract, and most commonly in drinking water, but milk and other food may be carriers of the infection. While there is no positive proof that the bacillus enters the body in any other way than through the alimentary canal, it is not improbable that it may. Frederick A. Packard, in *Progressive Medicine*, March, 1902, says: "Since our ability to more definitely recognize the bacillus of Eberth by bacteriological methods, and clinically in certain cases to employ the Widal reaction as a confirmatory sign of infection by this organism, cases are constantly being reported where the infection of the organism has apparently occurred from

* Read before the Medical Society of the District of Columbia, November 12, 1902.

some point beside the intestinal tract, such as the pleura, the bladder and the lung." Generally the primary location of the bacillus is in the lymphatic tissues of the intestines, yet the fever, in all probability, is principally due to its growth in other internal organs of the body.

The pathological changes are a catarrhal condition of the small and large intestines, with hyperplasia of Peyer's patches and the solitary glands, which, if resolution does not occur, progresses to necrosis and sloughing, and after the separation of the slough, the characteristic ulceration remains. The spleen and liver are invariably involved, and the kidneys, respiratory and circulatory organs may be more or less affected. The necrosis and sloughing of the intestinal glands are a source of great danger by reason of the hemorrhage, or perforation that may ensue.

The treatment of typhoid fever was a subject for dispute among physicians while its etiology was unknown and only its gross pathology, as manifested in the intestinal canal, was recognized; but now, having a knowledge of its true causation and pathological condition, and recognizing that we have, as yet, no specific remedy, I assume, and I hope I will not be considered impertinent in doing so, that no thoughtful, prudent physician will attempt to *cure* the disease with drugs, especially by the administration of such as are intended to render the intestinal canal aseptic. Even if intestinal sepsis could be accomplished it would be ineffective, since the cause of the disease has penetrated to organs beyond the reach of such remedies.

Numerous methods of treatment directed to the destruction of the bacillus have been suggested, and some for a time gained a certain amount of popularity, but have finally been abandoned as inadequate to the purpose.

Absolute rest in bed during the entire febrile state and into the period of convalescence is necessary, and good nursing and a carefully-regulated diet are of the first importance, and to this end a well-trained nurse, free from meddlesome propensities, is essential.

It is hardly necessary for me to say here—and I hope I will be pardoned for doing so—that the sick room should be as large and airy as possible, the windows, or a window, being kept open day and night. The light admitted should not be too glaring and the bed should be kept smooth and clean, the sheets being daily changed. The body clothing and bed linen, immediately upon

their removal, should be put into a solution of carbolic acid and afterward boiled. The evacuations from the bowels and bladder of the patient should be mixed with a solution of carbolic acid and allowed to stand for at least an hour before being emptied. Strict cleanliness, by daily sponging of the body with alcohol, is required, for, besides the comfort it affords, it tends to the prevention of bedsores; but changing position from the dorsal to the lateral decubitus is also important in this respect. The mouth, lips and teeth of the patient *must* be kept thoroughly clean. Small quantities of water should be given, at short intervals. The hair of women, if deemed best not to be cut short, must be carefully combed and braided.

Some doctors leave these matters entirely to the nurse, regarding them as too trivial for their consideration. My apology for introducing them here is that I consider them of such importance as to require the careful attention of the physician himself.

Diet.—There is a very general unanimity as to the dietetic management of typhoid-fever patients. The doctrine of Graves, who said: "If you should be in doubt as to an epitaph to be placed upon my grave, take this: 'He fed fevers,' " is sound to-day. The only qualification is that the food shall be in such form as to be easily digested and assimilated. Typhoid fever is a protracted and tedious disease. The functions of the various accessory glands of the alimentary canal are impaired and nutrition is greatly disturbed, so that it is of the utmost importance that the food should be carefully selected and prepared.

Milk is undoubtedly the best food, as it contains all the necessary elements in a liquid form. If given alone, three to four pints, diluted with ordinary water or lime-water, may be sufficient for twenty-four hours. It is necessary to examine the stools of the patient to see that the milk is fully digested. If there are undigested curds the quantity of milk should be lessened, and chicken- or mutton-broth, or beef juice given. Peptonized milk may sometimes be given with advantage. Thin oatmeal or barley-gruel answers a good purpose in some cases, and albumen water, flavored with lemon, may be given with benefit. It is important that too much food be not given, as excessive alimentation is likely to produce intestinal fermentation with tympany and diarrhoea.

With good nursing and careful regulation of the diet many cases may be safely conducted to recovery without the use of any

drugs whatever. But the disease is one of great muscular exhaustion, and the heart muscle suffers with the others, so that in cases of enfeebled circulation, and the very large majority of them are of this class, I am in the habit of giving strychnia for its stimulating and tonic effect upon the heart muscle, nor do I omit to give brandy or whisky when indicated. Much care is necessary in the management of convalescence. The patient must be kept in bed for eight or ten days after defervescence, and solid food should not be allowed until ten days after the subsidence of the fever. These precautions are made necessary by the fact that perforation has occurred as late as two weeks after normal temperature has prevailed. Indeed it happened to a patient of my own, a young man of twenty years, who had been walking about the ward for several days, when he was seized with violent pain in the abdomen. Perforation was suspected, and the surgeon on duty at the hospital, Dr. J. Ford Thompson, performed a laparotomy, and closed the perforation, but, unfortunately, the patient died.

What I have thus far said as to treatment relates more particularly to mild and moderately severe uncomplicated cases. But there are certain fiercer conditions that require special consideration. I am an earnest advocate of, and firm believer in, the efficacy of hydrotherapy in typhoid fever. Under its use temperature is reduced, the mind becomes clear, restlessness is tranquilized, sleep is induced, and it has a tonic effect upon the circulation. It is a most valuable help. The manner of its application depends on the judgment of the physician and on each individual case. I have seen good results follow cold sponging, the cold pack and the full bath. More commonly I use the former method. Nothing else is so effective and satisfactory for the reduction of high temperature as the application of cold water.

The meteorism which is so commonly present is best treated by the application of turpentine stupes or enemata of turpentine or milk of asafoetida. They failing, recourse may be had to the passage of a rectal tube. Charcoal sometimes affords relief.

In my experience constipation is more common than diarrhoea in typhoid fever. For the relief of the former a simple enema, every other day, will generally suffice.

For the diarrhoea, if the movements are more than three or

four daily, the diet should be even more carefully looked to than in ordinary cases, and thin barley-gruel substituted for the milk.

If drugs become necessary, opium is the main reliance. It may be given in suppositories or by enema, or Dover's powder with bismuth may be given by the mouth.

Intestinal hemorrhage should be treated by absolute rest, the administration of full doses of acetate of lead and opium, or the hypodermic injection of morphia, and the application of the ice-bag to the abdomen. The motions should be passed into the draw-sheet so as to avoid as much as possible the moving of the patient. The ingestion of food should be refrained from for ten or twelve hours. Bits of ice may be freely given. In cases of threatened collapse, stimulants should be resorted to, and subcutaneous or intravenous injections of salt solution may be given to revive the failing circulation.

If perforation of the intestine should occur, no time should be lost in opening the abdominal cavity, finding the perforation and securely stitching it. Reports of results in this direction are most encouraging.

As has already been stated, the application of cold water has a most beneficial influence in quieting the nervous manifestations in typhoid fever, and the constant application of the ice-cap to the head has a soothing influence. For the exceeding restlessness that sometimes occurs, Dover's powder with a small dose of phenacetine will be beneficial.

The management of convalescence has already been adverted to. It only remains to reiterate that the greatest care must be exercised in returning to solid food, and the patient must not be encouraged to leave his bed too early. The period of convalescence is one of great anxiety to the physician, and it is frequently difficult to make the patient understand the necessity for abstaining from solid food when he is so ravenously hungry. But with a little management a sufficiently varied diet may be suggested that will keep him in good heart until the time arrives for the removal of restrictions.

DISCUSSION.

Dr. Ruffin congratulated the essayist on the care with which he had prepared his very interesting paper. In the management of an ordinary case of typhoid fever there was little to be done with drugs. Three conditions might arise, however, requiring

great care : Tympanites, perforation and hemorrhage. The first of these was important because it predisposed to the other two. The floor of an ulcer might be composed of only a weakened peritoneal coat, and it was easy to see how even moderate tympanites might cause rupture at such a weakened situation. Dr. Cook had suggested the means of relieving tympany : Asafoetida was useful ; turpentine applied in the form of stupes or by enema was of value ; in cases which could not be relieved otherwise, the rectal tube, passed as high as possible into the colon, might be of advantage.

The differential diagnosis between perforation and hemorrhage was especially important, for the reason that the only hope for a patient in whom perforation had occurred, was dependent on its early recognition. Pain was an important diagnostic point. It was not a prominent feature in hemorrhage ; it might be very slight or even absent. But in perforation pain was usual, and was severe and sudden in onset. Following perforation there were local symptoms due to the escape of infective material into the peritoneal cavity. With the escape of gas into the peritoneal cavity, liver dullness became diminished and might entirely disappear. With the development of septic peritonitis, abdominal distention and tenderness became progressively more marked. These signs were either absent, or, if present, were less in degree in hemorrhage. Blood examinations were of aid in hemorrhage ; the number of red cells and the percentage of haemoglobin were reduced in proportion to the amount of blood effused, and usually there was a wave of leucocytosis. In perforation, leucocytosis was more marked and more constant than in hemorrhage, and was of longer duration. It occurred very promptly. For blood counts to be of their greatest value, records of previous counts with which comparisons might be made must be available. In uncomplicated cases of typhoid fever the white-cell count was below normal. The presence of blood in the stools was, of course, pathognomonic of hemorrhage, but this sign might not be available when the necessity for diagnosis was most urgent, because of the retention of the blood in the intestine. Fatal hemorrhage might occur into the intestine without the appearance of blood in the stools.

In the management of hemorrhage, the objects of treatment were to stop the bleeding and to avert disaster from the loss of blood. In cases in which the bleeding was slight or only moderate, an opiate to secure rest and quiet peristalsis, and an astringent for its local effect on the bleeding vessels were all that were required. Harm might result from the use of unnecessary measures. Stimulants and the use of salt solution, by hypodermoclysis or intravenously, should not be used unless positively indicated. These measures increased the activity of the circulation and were directly opposed to nature's method of stopping hemorrhage, viz : by lessening the force of the blood current and reducing blood pres-

sure. So long as the reduced activity of the circulation was within tolerable limits, nature's method should not be opposed. Clotting of the blood in the mouths of bleeding vessels was certainly more apt to occur, and to occur more perfectly, in the case of a reduced circulation than when the heart was under stimulation. When life was threatened, however, by the loss of blood, we were driven to the use of measures which increased the force of the circulation, and under such circumstances the use of salt solution, intravenously, if the exigency was very great, or other stimulants, might be the means of saving life.

The necessity for early recognition of perforation was the fact that the patient's only hope lay in early laparotomy and closure of the rupture. The best results of laparotomy for perforation had followed operation in the second twelve hours after the accident. Of 11 cases operated on at Johns Hopkins Hospital, 5 were saved, more than 45 per cent. The operation should be done under local anaesthesia if possible, and no ether or chloroform be given. Schleich's infiltration anaesthesia had been considerably used and with a fair degree of satisfaction. In some cases local anaesthesia was impracticable, and a general anaesthetic was necessary. Pain was said to be felt, when local anaesthesia was used, only during the incision of the abdominal wall. If the abdominal viscera were carefully handled, there was said to be no sensation of pain. In cases of suspected perforation, where from the lack of typical symptoms the diagnosis was in doubt, exploratory laparotomy under local anaesthesia was perfectly justifiable. When perforation had occurred, the gravity of the situation was such that in the absence of skilled surgical aid any physician was warranted in undertaking laparotomy and attempting to close the ruptured intestine.

Dr. G. Brown Miller said that Dr. Ruffin had spoken of the work of Cushing, Finney, Mitchell and others where in operating for typhoid perforation they had used infiltration anaesthesia *alone*. Dr. Miller had seen 3 or 4 cases where the operation had been started with cocaine anaesthesia, but in every instance chloroform had been given when the peritoneal cavity was reached. It had been considered necessary to give a general anaesthetic, either on account of pain or restlessness on the part of the patient or to more thoroughly explore and cleanse the peritoneal cavity. He thought it better, perhaps, to begin with chloroform and give as little as possible rather than cause the patient so much anxiety, fright, and at times pain, and then to be forced finally to resort to chloroform or ether.

Dr. Behrend took exception to the statement that death from perforation was inevitable without surgical intervention. He related the case of a boy, 11 years old, who recovered without operation. There was no reasonable doubt as to the correctness of the diagnosis of perforation in this case; it was confirmed by

Dr. Busey. Such a favorable termination, however, was extremely rare. The recovery was tedious, but the patient was alive today.

Medicines had a place in the treatment of typhoid. Since the introduction of the modern antiseptic treatment and cold baths, the mortality from the disease had diminished; the bad symptoms and serious complications which were formerly frequently seen were now rarely observed. He believed in the application of cold, and a modified antiseptic treatment, not the method of Woodbridge in its entirety. He also relied on guaiacol carbonate, and did not interfere with the bowels even if the patient had 10 or 12 stools a day. With this treatment he had had no death from typhoid in the last 8 years; this may have been accidental, or not. Early diagnosis was most helpful. If quinine failed to reduce the temperature in two or three days, he added guaiacol.

Dr. Yarrow stated that he had some little hesitation in advocating the use of antiseptics in typhoid fever after the very positive statement of his friend and colleague, Dr. Cook. However, individual opinion on this subject had little weight, as every physician should follow the treatment which he had found most successful.

The Woodbridge antiseptic method had been almost entirely abandoned for a number of reasons, but there could be no question that it had produced some wonderful results. In Dr. Woodbridge's wards at Fort Myer, during the Spanish-American war, he had seen the temperature charts of fifty or sixty patients, and according to these records the results of the treatment were simply remarkable.

Early in the '60's, acting on the advice of Bartholow, he had adopted his method of treating typhoid fever by antiseptics, and had used it in the Army with excellent results. Later on he had adopted the plan of Yeo of London, and up to the present time had had no reason to change his opinion regarding the beneficial effects of this in typhoid fever. Briefly it might be stated that this consisted in the internal administration of a chlorine water which was made by the addition of strong hydrochloric acid to an aqueous solution of chlorate of potassa. Beside this, to reduce the temperature, he had been in the habit of using guaiacol, acting under the advice of Dr. Da Costa of Philadelphia, ten or fifteen drops being rubbed in over the abdomen. It had been found very efficacious in the reduction of temperature, amounting to three or four degrees in ten minutes. He had never seen the great cardiac depression that was spoken of by some writers, and knew of no instance where death had resulted from its use in this way. In case the heart should become weak under the influence of guaiacol, we might tone up its action with caffeine or strychnia. He felt it his duty to advocate strongly the antiseptic method of treatment in enteric fever as he had been particularly fortunate in those cases in which it was used.

Dr. J. Dudley Morgan said that 78 to 80 per cent. of typhoid patients recovered spontaneously ; about 10 per cent. were cured, and 10 per cent. died. The essay had covered all the points except the nephritic complications. If the kidneys were not carefully watched, any tendency to disease would soon become manifest ; hence they should be kept active, and the system should be flushed out by the use of much water. He had had a number of severe cases of typhoid with renal complications, and had used to good advantage large high rectal injections of water, to be retained ; they tended to restore the function of the kidneys and aided materially in the patient's recovery.

Dr. Reyburn quoted a great writer as having said that one is apt to fall into one error by trying to avoid others. No disease tested the physician's skill more than typhoid fever. It was wrong to say that no drugs were required in its treatment. Calomel was a potent intestinal antiseptic, and was useful in the early stages and when there was constipation, bad tongue and breath, etc. Chlorine mixture was admirable. A modified antiseptic treatment was most useful and efficient. Bismuth subnitrate should be given when there were more than three or four passages a day.

Most patients were fed too much ; this was a common cause of the meteorism observed in the second week. One quart of milk daily was sufficient in the average case. Give less milk and more water. Milk was one of the best culture media for all organisms, and might in some cases keep up the diarrhoea. Give soups and broths as partial substitutes for milk. In the typhoid state of the third week the old turpentine mixture of the Pennsylvania Hospital was best. As a rule, stimulants were given too freely and too early ; give small doses frequently and at regular intervals. It should be remembered that alcohol was a sedative, not a stimulant, in large doses, under some circumstances.

Dr. S. S. Adams said that so far as the actual cure of typhoid itself was concerned he sided with those who had said " no drugs." No one present, however, would attempt to treat a case with a hemorrhage without giving drugs, and giving them freely ; the same was true of diarrhoea or any other prominent symptom. But typhoid could be satisfactorily treated without polypharmacy. He had observed the results of treatment in hospitals for the last 30 years, and had studied them by decades. The records showed that the mortality in one institution had been reduced 50 per cent. over that of the first decade, from 1870 to 1880. Then, quinine was given to cinchonism and the mortality was very high ; but it did not compare with the mortality between '80 and '90, when the antipyretics were introduced. More were killed by their use than would have died had all patients been left alone. In the last decade came the cold-water treatment. Now, the pendulum has swung back some, and we did not tub every case. The mistake was often made of treating the fever *per se*. A temperature of 104.5

did not necessitate tubbing unless it produced marked disturbance of function; one should be governed by the amount of harm which the fever did rather than by the mere height of the temperature itself.

It was not well to allow many stools in the 24 hours. As to over-feeding, one should be guided by the character of the digestion and assimilation as shown by frequent examinations of the stools. These examinations were absolutely necessary in typhoid. Many patients went through the course of the disease without tympany; very few patients had it bad enough to require treatment; this had been his experience. Intestinal antiseptics had no appreciable effect on the bacilli causing the disease; they were no more efficient than local antiseptics when applied to a diphtheritic membrane. Digestants might be useful, however, in preventing fermentation. The application of guaiacol to reduce temperature was a dangerous proceeding, according to his experience.

Dr. T. C. Smith asked Dr. Adams how he treated his patients, if he did not use drugs, tubbing, etc.?

Dr. Adams replied that each case must be regarded as an entity. He treated the patient as an individual, and did not employ the same routine treatment in all cases as the advocates of intestinal antisepsis would have us do. He gave the remedies which were called for in each individual case—baths, astringents, calomel, etc.

Dr. Behrend asked what was the cause of the fever?

Dr. Adams replied, the toxin produced by the germs of the disease.

Dr. Behrend said that if we have antiseptics with which to stop the formation of the toxin, why could we not cure the disease itself?

Dr. Adams replied that no antiseptic had yet been discovered which would do this. The advocates of intestinal antisepsis did not get the results which they claimed.

Dr. Brückheimer pointed out the apparent inconsistency of those who said "give no drugs." While he belonged to the old school, he was nevertheless progressive. He advocated calomel and soda at the commencement of typhoid fever, and later, intestinal antiseptics, heart stimulants, if indicated by the pulse, and, of course, nourishing liquid food, milk, etc. If intestinal antiseptics did no more they prevented tympanites, and this was accomplishing much, because tympanites predisposed to hemorrhage and perforation and was detrimental to the patient in other ways. The extreme cases which were formerly seen were no longer observed since the antiseptic treatment came into use.

Dr. J. Ford Thompson said that he had listened to the different opinions expressed, and had compared them with discussions which he had heard years ago, and he thought it a question whether we were not degenerating. He had listened to discussions 30 years ago

which were better than the one he had heard to-night. We were apparently helpless in the face of typhoid fever, and yet no two members had expressed the same opinion as to the best means of treating the disease; nor would most of the views be approved by the mass of the profession at large. Some depended on antiseptics which were incapable of killing the feeblest germ in existence. Cold baths were employed years ago. In the late war every camp was helpless before typhoid fever.

Not a word had been said concerning prophylaxis, and yet this held out the one and only hope of eradicating the disease. Congress must furnish the District filtered water. In Hamburg, Berlin, and other cities where filtration plants had been installed, the mortality from typhoid had dropped to a surprising degree, and it would be interesting to compare our present mortality with the death rate after the District is furnished filtered water. Closing the wells did much good, but more was necessary to wipe out the scourge; the city must have filtered water. Meantime, families should be urged to boil their drinking water.

As to the surgery of typhoid; he had operated twice, once for perforation, and once for appendicitis in typhoid; the second patient recovered. He did not agree with Dr. Ruffin that one should operate if possible in the second 12 hours after perforation; his experience had shown that one must operate within 8 hours or lose the patient. More than this, he believed that the operation should be done at once, just as soon as possible. If the diagnosis was in doubt an exploratory laparotomy could do no harm, and might result in vast good.

Dr. Chappell said that recent authority sustained Dr. Thompson in his opinion that operation should be performed just as soon as a diagnosis of perforation could be made; one should not wait for the second 12 hours. He did not agree with Dr. Thompson that we were no better off so far as results in the treatment of typhoid were concerned than we were 30 years ago. Typhoid was being treated better today than ever before; statistics bore out this assertion. Opinions as to the best methods differed, because physicians of today were thinking more for themselves; each physician judged for himself as to the best method of treating the disease. Formerly the mass of the profession were prone to follow the leadership of a few and shaped their treatment accordingly. The diversity of treatment was less in those days because the leaders were few in number. This state of things, happily did not obtain to such an extent today. Perforation was not due to the character of the food, it was due to the effects of the toxin which interfered directly or indirectly with the nutrition of the tissues involved. The time when solid food might be given varied in different cases; he had allowed it much earlier in some cases than in others. Concerning the treatment of the diarrhoea, one authority said to keep the bowels constipated,

another said to keep them open. Which was right? This was one of the questions which each physician must decide for himself.

Dr. J. Ford Thompson said that every man had a right to his own opinion, and to practice in accordance with it, provided his opinion was correct. All physicians were not, however, equally capable of determining which was the best treatment for a given disease, and the mass of the profession was by no means on an equality clinically with the great leaders of medicine. Hence, it was a question whether the average physician should follow his own individual opinion rather than follow the advice of those who were unquestionably his superiors, because of superior advantages or for other reasons. Diseases like erysipelas, typhoid, etc., about whose treatment there was a great diversity of individual opinion, were the ones least amenable to treatment, and most of the methods suggested were sooner or later cast aside as being worthless. On the other hand, the diseases which were most successfully treated were those concerning whose management the profession was practically agreed, *e. g.*, diphtheria, syphilis, etc.

Dr. Chappell explained that he did not mean that any physician could afford to disregard the principles set down by the leaders in medicine or ignore the results obtained by others, but that every man must do his own thinking and acting. He believed in obtaining all the information possible, and would follow no one man blindly.

Dr. Sprigg agreed with Dr. Adams that the treatment of typhoid fever did not mean polypharmacy. There was no specific for the cure of the disease. Dr. Ruffin, in speaking of the management of hemorrhage had advised waiting an indefinite period before resorting to the injection of salt solution because it was liable to increase the hemorrhage. He could not agree with this teaching. Hemorrhage in typhoid was an exceedingly treacherous accident; it was impossible to know how much blood had escaped into the intestine, and the urgency might be great although little or no blood had appeared in the stools. Hypodermoclysis was not attended with danger of increasing hemorrhage and it did increase the coagulability of the blood; the latter fact had been proved by physiological experiment, and it was also shown by the fact that the hydraemic condition of the blood in pregnant women increased its coagulability and aided in the cessation of hemorrhage from a bleeding vessel. Hence it was best not to wait in the presence of a marked hemorrhage, but to give saline injections whenever indicated.

Few drugs were indicated in the treatment of an uncomplicated case of typhoid fever. A comparison of the present mortality with that of 15 years ago, when more drugs were given, proved this fact. He never ordered medicines unless they were distinctly indicated in the case in hand. He used guaiacol carbonate, but not as a specific; it lessened bacterial activity in the intestine, as

was shown by bacteriological examination and a diminution in the fetid odor of the stools. He had not been able to accomplish this as satisfactorily by the use of any other drug. He gave enough of the guaiacol to do away with the offensive odor of the passages. Of course no intestinal antiseptic could act on ptomaines or bacteria after they had penetrated the mucous membrane of the bowel. Only recently had the *bacillus typhosus* been constantly found in the blood when a sufficiently large quantity had been subjected to examination.

Dr. Vaughan said that the mortality from typhoid was very curious; according to Tyson it varied from 1 to 50 per cent., and according to Osler 10 to 30 per cent. When Dr. Vaughan was treating typhoid he had a mortality of 14 per cent; at the same time Dr. Wilson, who used the same treatment, had 1 per cent. There was no explanation for this wide variation. As to improvement in treatment in recent years, recent reports from the city of Cleveland and other cities showed a mortality of over 50 per cent.

In considering the complications, affections of the gall-bladder should not be overlooked, gangrene, perforation, etc. Parotitis was an interesting complication. He had recently operated on two cases. It was usually considered of grave import, but in the six cases that he had seen there had not been a single death.

No surgeon at the present time would question the propriety of operating for intestinal perforation, and all were practically agreed that the best time to interfere was just as soon as diagnosis was made. The importance of shock had been overrated. Until recently Keen's collection had been taken as the standard. He reported 158 operations for perforation with about 24 per cent. of cures, and stated that the best results were obtained from operation in the second twelve hours after perforation. A later report by Armstrong of the Montreal General Hospital, however, gave 33 cases with 40 per cent. of recoveries in cases operated on in the first twelve hours, and only one recovery, less than 5 per cent., when operation was done after that time. The rule was the same as in all serious accidents requiring surgical interference, especially when peritonitis threatened: the sooner the operation was done, the better the patient's chances for recovery. Even if the diagnosis was incorrect, little harm was done if the operator was careful. He did not favor the use of cocaine in these cases, but preferred a general anaesthetic. With cocaine one had to depend almost entirely on the "nerve" of the patient, and this was very uncertain. In some cases no anaesthetic whatever was required. He had operated on two patients, and both died. In the first case, death was due to waiting 48 hours for a unanimity of opinion among the consulting physicians as to the diagnosis; the second patient was practically moribund when the operation was begun.

Dr. Ruffin said that he was surprised to hear Dr. Vaughan agree with Dr. Thompson in a statement made by the latter that no advance had been made in recent years in the treatment of typhoid. Several years ago Dr. Ruffin had compared the results of treatment by various methods other than hydrotherapy with results obtained by the more recent systematic use of external wet cold. In a total of 10,381 cases, collected from various sources in the treatment of which cold baths were not used, the average mortality was 15.91 per cent. In a total of 2,678 cases, also collected from various sources, in which hydrotherapy was methodically practiced, the average mortality was 6.01 per cent. The average death rate from typhoid fever probably did not at present exceed 7 per cent., which was less than half the death rate prior to the treatment by the Brandt method. The three great advances which had been made in the management of typhoid fever within recent years were the use of external cold for its antipyretic and stimulating effects, early laparotomy for perforation, and subcutaneous or intravenous saline injections for severe vascular depletion by intestinal hemorrhage. Watson's *Practice*, which Dr. Thompson cited as the best authority on typhoid fever, did not recommend or discuss any of these measures, except that it suggested sponging, *if agreeable to the patient*. They had not come into use at the time the book was written. Watson's *Practice* was nevertheless a valuable work.

The introduction of intestinal antiseptics marked another advance in treatment. With them we could not hope to destroy the specific organisms of the disease, for we knew that the typhoid bacilli were not confined to the intestinal tract, but also existed in the liver, spleen, kidneys, blood-vessels, rose spots, and elsewhere, but the use of antiseptics seemed to diminish intestinal fermentation and in a measure prevent tympanites and the evil consequences to which it predisposed, viz: hemorrhage and perforation.

Dr. Sprigg had misunderstood him. He had not said the diagnosis of hemorrhage should rest on the finding of blood in the stools. He had intended to say the contrary. It was well known that blood might be retained in the intestines for many hours or even for days. Death might occur from hemorrhage without the appearance of blood in the stools. He was not opposed to the subcutaneous or intravenous injection of saline solution where hemorrhage was so severe as to threaten life; but he thought salt solution was often used prematurely and injudiciously. For instance, a large volume of fluid put into a vein must cause a temporary rise of blood pressure, and a rise of blood pressure must tend to a continuance of hemorrhage if it had not ceased, or to a recurrence if it had stopped.

Dr. Vincent said that as a general rule the less medicines given in the average case of typhoid, the better. They should be given,

however, when indicated. His experience had convinced him that intestinal antiseptics had no effect whatever so far as the destruction of the *bacillus typhosus* was concerned; they were only of value in preventing distressing symptoms and complications. Experiment also had shown that they were inefficient as germicides in the intestinal canal. He advocated the use of saline injections in hemorrhage. Sometimes, however, hypodermoclysis was followed by abscess, marked debility, and other unfortunate sequelae. Operation was the only proper treatment for perforation. Valuable time was often lost, however, in overcoming the prejudice of the family, waiting for relatives, etc.

Dr. Neff said that he was surprised at the mortality statistics given by a previous speaker; 14 per cent. to 50 per cent. seemed inexcusable. At the U. S. General Hospital at Fort McPherson, Georgia, where he was stationed during the Spanish war, 1,211 cases of typhoid were treated, with a mortality a fraction less than 7 per cent. This included the men who were dead when they arrived, and those who died within 24 or 36 hours, for whom little could be done. The men were in bad condition from the long journey, and every possible complication existed. Many had aestivo-autumnal malaria coexistent with or subsequent to the typhoid. Hemorrhages were quite common. Parotitis unilateral and bilateral, suppurative orchitis and other complications were often present. The simpler the treatment, the better the result. Absolute rest and a milk diet exclusively until the temperature had been normal for ten days, with cold sponge baths, were usually sufficient. The latter was preferable to the plunge bath, which occasioned much shock, and dangerous handling of the patient. Strychnia should be given when indicated. In hemorrhage, elevation of the foot of the bed, ice coils to the abdomen, and packing the rectum with ice, were of benefit. When perforation occurred, the only possible chance of recovery was by prompt surgical intervention.

Dr. J. W. Bovée said that a few of the speakers taking part in the discussion had recommended the use of salt solution in the treatment of this disease. He regretted it had been mentioned in such general terms. In his consultation work he had found a notable lack of regard for the proper methods and technique to be followed in its exhibition. He had seen it run under the skin at a temperature lower than 98 degrees. He had seen chills occur as a result and morphia administered hypodermically because of the chill. There was apparently a wide variance in the minds of general practitioners as to the real physiological action of salt solution and likewise of the indications for its use. The gentlemen speaking pro and con on this feature of the subject could perhaps do no greater good to the majority of the medical profession than to suggest in minute detail the manner in which salt solution acted in the human body, under what conditions it should

be used and what rules should be laid down as to the employment of each and every method of administering it in typhoid fever.

Dr. Acker said that a simple case of typhoid with a temperature of about 103 hardly needed any treatment and it was rarely necessary to use drugs. The resident physicians at the Children's Hospital of this city were instructed to put every suspected case to bed, give liquid diet, disinfect the excreta and give cleansing baths, but to do nothing for the temperature. The most important point was as to the diet. He had tried all kinds of food and believed that milk was the best if it agreed with the patient. It could be prepared in different ways for different patients. When the fever was high enough to require treatment, he ordered baths or sponging, but no drugs. Intestinal antiseptics were useful in allaying bowel symptoms but had no effect on the specific germ of the disease.

Unlike Dr. Vaughan, he had had bad results in cases complicated with parotitis and he always gave an unfavorable prognosis in those cases. Hemorrhage, as a rule, was over-treated. A slight hemorrhage required no treatment. An opiate might be given if the patient was especially nervous but it would not affect the bleeding. Astringents were practically of no value. Hemorrhage, with organic heart trouble, was usually fatal. Tympanites with hemorrhage was also a very serious matter as it interfered with the contraction of the bleeding vessel. He advocated the use of adrenalin hydrochloride; he had seen remarkable results follow its administration recently in three cases. Two of them were at the Children's Hospital: 20 drops of a 1 to 10,000 solution were injected hypodermically every 2 hours for 3 days. Practically little could be done for perforation in private practice. The surgeon usually came in too late to be of any assistance. The patient's chances at a hospital were better, but even there he might die from the same cause.

Dr. McCormick recalled a discussion on this subject ten years ago wherein he was severely criticised for advocating the "no drug" treatment. He had done so because the coal-tar antipyretics were in vogue at the time and had produced fatal results, and he advised the giving of cold baths in their stead. He had had no reason since then for changing his views and many of those who then criticised him agreed with him now. The mortality from typhoid was much less now than formerly and a decided advance had been made in the treatment of the disease. By far the most important part of the treatment in uncomplicated cases consisted in the management of the diet.

Dr. Acker said that some one had suggested that strychnia and alcohol should be given early in the disease. He did not agree with this and thought that stimulants should not be given until there was a distinct indication for their use.

Dr. Claytor agreed with Dr. Acker in almost everything he had

said, but could not agree with him as to the value of adrenalin in hemorrhage. He had used it in one case as suggested by Dr. Acker and had noted no result whatever. The reason why it would probably be of no service was because it produced little or no effect on blood pressure unless thrown into a vein; and if this were done, the increase in pressure tended to increase rather than diminish the hemorrhage. In cases of perforation the surgeon had a fair chance if he were called in soon enough. One of his cases had been operated on but the patient died.

He inquired whether he had understood aright the statement that the injection of salt solution into the blood increased its coagulability and was therefore indicated as soon as hemorrhage occurred. This seemed improbable because the injection added to the amount of blood in the vessels, increased the pressure, and thus tended to keep up the bleeding. It was directly opposed to nature's method of stopping the hemorrhage by diminishing the force of the circulation, and, in his opinion, was indicated only when there was a tendency to collapse. Besides, it was no longer believed that the blood tended to become hydremic in pregnancy; the opposite was the case, the number of red cells and the proportionate quantity of haemoglobin being increased. This fact was mentioned because a previous speaker had tried to draw an analogy between the condition of the blood after injections of salt solution and the supposed hydremic blood of the woman at childbirth. As the blood was not watery toward the end of pregnancy this comparison did not serve to prove his point as to the greater coagulability of watery blood.

Dr. Woodward said that Dr. Acker hardly meant what he said when he remarked that typhoid fever seldom needed "treatment." Neither did Dr. Claytor when in effect he indorsed Dr. Acker's statement. The medical profession was apt to criticise those who claimed that faith healers and others of that sort did not "treat" cases, and yet two representative physicians had said here that cases of typhoid fever seldom needed "treatment." As a matter of fact the physician who, on the basis of an examination of a given person, directed that that person go to bed and prescribed for him the particular methods of diet, bathing, exercise, etc., which he should follow, "treated" that patient just as much as if he prescribed for him all the drugs in the pharmacopoeia.

A prominent Homoeopathic physician had reported in the course of conversation with the speaker a case of intestinal hemorrhage in a typhoid fever patient apparently controlled by the administration of adrenalin chloride. In determining the value of treatment in cases of this kind however the possibility of errors in diagnosis should be borne in mind. A patient under the speaker's care, who was seen with him in consultation by the late Dr. Johnston, presented all the symptoms of intestinal hemorrhage

except the visible discharge of blood. Treatment was directed toward the checking of the supposed intestinal hemorrhage. Within a few hours however the patient passed a lumbricoid worm and the symptoms of hemorrhage promptly disappeared.

Dr. Keech said that as soon as he made a diagnosis of typhoid fever he emptied the patient's bowels by means of the mildest aperient possible and afterward kept him on a nourishing liquid diet. He ordered cold sponge baths, but never tub baths. The great majority of patients would recover under this treatment; as a general rule too much medicine was given in typhoid. The ice-bag, placed on the abdomen, was a valuable remedy in hemorrhage; it sometimes cured without the aid of drugs. To illustrate its efficacy he related a case in which he succeeded in checking the hemorrhage by this means and the internal administration of subgallate of bismuth.

To illustrate the difference in the practice of physicians as regarded the giving of drugs in typhoid, he referred to the cases of two brothers who were treated by himself; both recovered; the drug bill of each was \$4.75; in the case of another person treated by another physician, \$45.00. After the first week, little was needed except carefully regulated diet and cold sponging. The first week generally decided the patient's welfare.

Dr. Acker said that diet was the main point in the treatment of typhoid. It was always his custom to open the patient's bowels at the beginning with castor oil or calomel, and if the patient was constipated during the course of the fever he ordered enemata every other day or an occasional dose of castor oil.

Dr. Thompson had claimed that typhoid as well as many other so-called medical diseases was coming to be regarded as surgical. Duriac (*Presse Med.*, Paris, July, 1902) has recommended that all severe typhoid cases he treated surgically by making an artificial anus and washing out the inflamed bowel, and reported a case with hemorrhage so treated and with recovery.

Dr. Chappell spoke with reference to the "no drug" treatment of typhoid. It was not practicable to treat the disease without the use of some medicine, on account of the attitude of the patient's relatives and friends, if for no other reason; the physician who attempted to do so would be liable to be dismissed. He recalled an instance where a physician *was* dismissed for not prescribing drugs. He doubted if any physician present treated a case of typhoid without ordering some medicine. Did those who said they used no drugs really mean what they said? He doubted it. What they evidently meant was that they were careful not to give medicines unless there was a distinct indication for their use. This however was what we were all accustomed to do, and as a matter of fact, there existed an indication for medicinal treatment in some form in 99 out of every 100 cases of typhoid. We all gave medicine in typhoid, but some gave more than others; he often gave

dilute hydrochloric acid, three to five drops, when no other medicine was particularly indicated, and this came as near as possible to nothing.

In treating the disease the main point was to start right. Put the patient to bed, order liquid diet, and give an aperient at once if indicated. He felt relieved of responsibility when Dr. Acker declared that it was practically impossible to treat perforation surgically, for it had seemed impossible for him (practicing in the suburbs) to secure the services of a surgeon in time to save a patient's life. Hemorrhage should be treated energetically; there should be no procrastination; lock up the bowels at once with lead acetate and opium; the ice-bag and other remedial measures should also be employed. He had little faith in adrenalin; he had never used it, but what he had read had led him to believe that it was a dangerous remedy.

Dr. Mary A. Parsons said that each epidemic of typhoid brought its own lesson. She had learned one this autumn which might be useful to other members; it might explain why some cases do badly in spite of every effort on the part of the physician. She referred to faithlessness on the part of the nurse. In two recent cases she had found the record and temperature charts made up 12 hours in advance.

Dr. D. O. Leech emphasized the importance of withdrawing food for at least 12 hours after hemorrhage. In a recent case he had successfully used the ice-bag, and deodorized tincture of opium, 10 drops every 4 hours; he elevated the foot of the bed and lowered the head of the patient, withdrawing all food for 12 hours. He also approved of lead acetate and opium.

Dr. F. R. Hagner said he could see no reason why a surgeon could not be had in time to operate on these cases in a private house. Any surgeon would be ready to operate on a perforation within two hours. The fault was the inability of the physician to make an early diagnosis.

Dr. Barnes asked whether any member present had had experience with gelatin in the treatment of hemorrhage. He also called attention to the fact that milk was not a liquid food after it reached the stomach; it formed a solid curd and hence should be diluted before it was given to the patient.

Dr. William Ward said that Dr. Reyburn had struck the keynote to the treatment when he said that we should treat each patient as an individual, and not try to treat all cases by one general method. Different types of the disease required different modes of treatment.

Dr. Banister said that he had listened with interest to the suggestions advanced for the management of hemorrhage. One very important point however had not been mentioned. How could we determine that bleeding was taking place, not that it had occurred? By the time the blood appeared in the stools the

hemorrhage might have ceased, and there might no longer be an indication for energetic treatment. A sudden fall of temperature in typhoid was indicative of hemorrhage but it might be 4 or 5 hours before the diagnosis was made with certainty by the evacuation of blood; and treatment might then be instituted when the necessity for it may have passed. Very few physicians had seen a hemorrhage so severe as to immediately threaten life. Most of the treatment of hemorrhage in typhoid was treating a condition that had passed.

Dr. Motter said that one of the greatest mistakes was to treat the disease and not the patient; another was to treat the thermometer, *e. g.*, to tub whenever the temperature reached a certain point without reference to other existing conditions. The question was how much harm was the high temperature doing; and it was the degree of harm and not the height of the fever which determined the necessity for the use of antipyretic measures. All the symptoms must be considered. Was it not possible that the fever was in some way an effort of nature to rid herself of some of those deleterious agencies—bacteria, toxins, or whatnot?

Dr. Cook, in closing, said that the essay was written with the idea of bringing out an individual expression of opinion regarding the treatment of typhoid fever. This object had been accomplished and he was glad that so many had taken part in the discussion; he had learned much from it.

In reply to Dr. Thompson he said that physicians were no more vacillating in the treatment of disease than were surgeons. Not so many years ago the Society never met but the air was laden with carbolic acid vapor, but it was not so today. He did not refer to this in any critical spirit, but simply to show that surgeons were quite as vacillating as physicians. In the treatment of fractures the surgeon placed the fragments in the best possible position to enable nature to effect a cure, but the surgeon did not *cure* the fracture. So in typhoid fever there was much that could be done to put the patient in the most favorable condition for recovery. The withholding of drugs did not mean that the patient received no treatment—there was much to occupy the physician in looking after the diet and general management of the patient. When however drugs were indicated he would give them without hesitation. Otherwise they were not only useless but were capable of doing harm.

He agreed with Dr. Barnes as to the necessity for the dilution or modification of milk. He also advocated frequent examinations of the stools in order to ascertain if digestion was being properly accomplished. It was impossible for him to refer to all the points that had been emphasized in the discussion. So far as he could see, guaiacol carbonate could have no effect on the specific germs of typhoid fever because it could not reach them; its only virtue must consist in its power to control fermentation

and possibly prevent tympany. In answer to Dr. Banister he said that treatment of hemorrhage should be instituted just as soon as the sudden fall of temperature and symptoms of collapse indicated its presence; it should not be delayed until the diagnosis was positively confirmed. Perforation called for immediate operation.

Dr. Thompson added that Armstrong reported 50 per cent. of recoveries after operation for perforation; others had reported 30, 40, etc. All the operations were performed in the first 12 hours: after that, the results were not so good.

FIBROMA OF UTERUS; HYSTERECTOMY; SOFTENING OF BRAIN; DEATH.*

By D. PERCY HICKLING, M. D.,

Washington, D. C.

R. G., a colored woman, age 40, was admitted to the Washington Asylum Hospital, July 10, 1902. Her father, brothers and sisters were living and in good health; mother died from an abdominal tumor; patient had been healthy during her adult life but was addicted to the habitual and excessive use of alcohol; had had five children. About 1891, she began to have an almost constant pain in the lower abdomen and was never pregnant afterward; a tumor appeared later in the lower abdomen. She had been drinking excessively when admitted; was very nervous; had pain in lower abdomen, increased on pressure; vomited food and was very thirsty; bowels irregular; she said "the lump in her stomach" had been growing more rapidly. Temperature 99, pulse 80, respiration 28; very well nourished, slightly jaundiced; heart, lungs, liver and spleen appeared normal; urine contained albumen; on abdominal palpation a hard symmetrical solid uterine tumor was felt which was somewhat tender *per vaginam*; uterus large, hard and not freely movable.

Diagnosis: alcoholism and fibroid tumor of uterus. Soon after admission an alcoholic mania developed and continued several days. About July 15, she became mentally clear after treatment with bromides, hot packs, etc. July 22, Dr. Hickling performed a laparotomy; found the uterus as large as a good-sized coconut, hard and covered with several small cystic growths; both

* Reported with specimens to the Medical Society of the District of Columbia, October 29, and November 19, 1902.

tubes were enlarged and adherent and the left contained about an ounce of pus. He deemed it best to remove the entire uterus and drained through the vagina; the abdominal wound was closed without drainage; the vaginal drain was removed on the 4th day there having been no signs of infection. The abdominal wound however became infected (extra peritoneal) along the line of the superficial sutures and had to be dressed several times. About a week after the operation symptoms of dementia appeared and persisted after her discharge from the hospital in the latter part of August.

Dr. Bovée said that Dr. Hickling had been wise to do a complete hysterectomy. In a number of cases, cancer of the cervix had followed removal of only the body of the uterus for fibroids. Laceration was also thought by some to be a factor predisposing the individual to cancer, but there was none in the present case. While complete hysterectomy was troublesome in some cases it was often as easily performed as partial removal.

As to the mental symptoms exhibited by the patient, a certain degree of aberration was to be expected in patients suffering with uterine fibroids. Mania sometimes followed hysterectomy for fibroids. Mental aberration was more frequently a sequel of this than after abdominal operations for other causes; the fibroids gave rise to vascular and other systemic changes of a predisposing nature.

In answer to a question by Dr. Reyburn as to whether the aberration followed the fibroids *per se* or whether it only occurred after the operation, Dr. Bovée said that it occurred *per se*.

Dr. Reyburn said that the last statement was not in accord with his own experience; he had observed mental aberration after operations for fibroids, but had never seen or heard of a case in which it resulted from the mere presence of the growths in the uterus.

Dr. Vaughan agreed with Dr. Bovée on this point. Many gynecologists had said that mental aberration sometimes occurred in women with fibroids even when no operation had been performed. This was in accord with his own experience.

Dr. A. F. A. King suggested that the anemia of the brain, which in some cases resulted from the presence of fibroids in the uterus, might be an indirect cause of the mental symptoms.

Dr. Hickling said that in his case there had been no menorrhagia, but there was a history of chronic alcoholism. The woman had many symptoms pointing to dementia, and he believed that the mental aberration here was due to organic changes in the brain.

Dr. Reyburn said that although one man's experience had but little weight, he had seen many cases of uterine fibroids but had

never associated them with mental aberration occurring before operation for their removal; on the other hand he had observed cases in which the aberration was clearly dependent on the operation for removal, and was due to the artificial menopause which followed some of these operations, to the thought that the patient was unsexed, and other causes.

Dr. Bovée suggested that removal of the uterus did not produce an artificial menopause; removal of the ovaries was required to produce this effect.

Dr. Reyburn replied that this fact was known to all.

November 19th, Dr. Hickling presented the brain of this patient, which he said showed, according to the report of Dr. D. S. Lamb, a softening of the callosum, fornix and much of the thalamus and striatum. The post mortem examination by Dr. Cain of the Washington Asylum Hospital showed the lungs, spleen, stomach and intestinal tract perfectly normal; a few slight adhesions of the omentum to the abdominal scar due to the operation; otherwise nothing pathological was found near the field of operation. Examination of the heart showed the mitral valve incompetent; the liver was cirrhotic; kidneys normal in size, capsules slightly adherent; vermiform appendix normal.

Dr. A. B. Richardson, being called on, said that he could not throw much light on the relation between uterine fibroma and brain symptoms. The statement had been made that symptoms of mental aberration might result from the mere presence of a uterine tumor; he could not say that this was impossible, but his own experience was to the contrary. If it were the case, the proportion of uterine tumors found in insane asylums should be greater than it is. In the last 26 years he had had 4,000 or more female patients under his care and he could recollect no case in which softening of the brain resulted from the presence of a uterine tumor. It was not necessary to depend on this explanation in the present instance as alcoholic excess with its usually attendant habit, as well as changes due to specific disease, predispose the individual to thrombotic obstruction of the cerebral vessels.

Replying to a question by Dr. Adams, Dr. Richardson said that while he had had under his care no patient in whom there was an evident connection between the existence of a uterine tumor and insanity, he had treated several patients whose mental aberration had followed operation. He did not believe that removal of the uterus often resulted in insanity as had been stated.

Anemia often gave rise to mental symptoms and anemia frequently resulted from the metrorrhagia which accompanied uterine fibromata; but the mental disturbance was due primarily to the anemia and not to the presence of the tumor *per se*. He referred

to the case of a nurse now under treatment whose mental symptoms arose from this cause. He related another case in which hallucinations of hearing and delusions of persecution were due to the anemia caused by metrorrhagia; operation was performed and the mental state became normal as the anemia disappeared and health returned.

Dr. D. S. Lamb did not think that the softening in the brain under discussion was due to chronic alcoholism; the post mortem findings would not warrant this conclusion.

Dr. Castelli said that Pinard had stated and demonstrated by statistics that sterility was the principal cause of fibroid of the uterus. Sterility constituting an abnormal condition of the organism determined a morbid instability of the nervous system, and might for that reason produce multiform nervous disturbances, motor, sensory, secretory, vaso-motor. So the occurrence of lesions of the nervous system in women affected with fibroid was indirectly due to sterility and hence did not constitute a clinical absurdity.

Dr. Kober inquired whether there were any distinct foci of softening in the brain.

Dr. Lamb replied in the negative. There was a general softening.

Dr. Richardson agreed with Dr. Lamb that the softening was in all probability due to some other cause than chronic alcoholism.

Dr. Hickling, in closing, said that he did not present the specimen as an instance of softening due to alcoholism although the connection was possible. He believed that it was due to circulatory changes as suggested by Dr. Richardson. He had not said that the mere presence of fibroid tumors in the uterus was not infrequently a cause of mental disturbance; that statement had been made by some one else in the course of the discussion at the previous meeting. That insanity sometimes followed operation however was a well known fact. He recalled a case in which operation for hip disease was followed by mental symptoms so severe that the boy had to be removed to an asylum. He had operated for the relief of symptoms causing mental trouble, but the results were not encouraging.

HISTORY OF DOCTOR WALTER REED'S ILLNESS
FROM APPENDICITIS.*

By W. C. BORDEN, M. D., Major and Surgeon, U. S. A.

After referring to the close friendship which had existed between Dr. Reed and himself and the great personal responsibility which he felt in the management of the case, Dr. Borden said that the case well illustrated the insidious onset of the disease as sometimes seen, and the fact that the symptoms were often most treacherous in that little could be judged from them as to the severity of the lesion in the intestine. No other case had more thoroughly impressed upon him this fact.

When Dr. Reed first consulted him, November 14, he said that he believed he had appendicitis. Examination disclosed a tender spot about one-third of the way in from the right anterior superior spine. There was also increased muscular tension in that neighborhood. He had had colicky pains for three days, but had kept up and around. Temperature 99.4 and pulse 77. A diagnosis of appendicitis was made. That evening the symptoms persisted; bowels moved by cathartics. The next morning the patient was apparently better; there was less pain, tenderness and tension; temperature 98.6, pulse 60. Dr. Borden believed that the attack was about over, reserving however the opinion that one could never be certain, in dealing with appendicitis. That night, the temperature was 99.8, and the next morning it was 98; the same evening (Sunday) 100.4, and there were a few colicky pains, but the other symptoms were not increased. Although the symptoms were not at all grave, Dr. Borden advised immediate operation on account of the treacherous character of the disease. Next morning the temperature was 98.8, pulse 60. Operation performed by Dr. Borden at 11 A. M.

Some difficulty was encountered in finding the appendix and it was necessary to enlarge the incision. When located, it was found to be very large and was so closely adherent to the *caput coli* as to be practically embedded in it; it was given off from the center of the lower part of the *caput*. It was partly filled with pus and had perforated at one point; but the pus, partly in and partly out of the appendix, was still prevented from escaping into the

* Reported with specimen by request to the Medical Society of the District of Columbia, November 19, 1902.

abdominal cavity by an extremely thin wall of adhesions, so thin that the pus showed through and its escape could have been but a matter of an extremely brief period of time. The field of operation was walled off with gauze. When the adhesions were separated, pus escaped; it was evacuated and mopped out with a dry sponge. The wall of the caecum was infiltrated and necrotic; this gave trouble by the tearing out of the stitches. The wound was closed with drainage.

The appendix showed signs of great previous trouble. Inquiry disclosed that Dr. Reed had for a long time suffered from attacks of indigestion and "intestinal colic." The present trouble arose from the proximal end of the appendix. The appendix was practically a pus sac. This condition existed with a temperature not over 100.6 at any time and with comparatively insignificant symptoms, showing what serious pathologic changes may be present with slight symptoms.

Dr. Reed's condition at the time of the report was favorable. Nevertheless, it was necessary to give a guarded prognosis. On the evening of operation the temperature was 99; next morning 102, and the pulse 90; last night 101.8, pulse 98; this morning 99, pulse 96; this evening 101.4, pulse 120. The rapidity of the pulse may have been due in part to the fact that Dr. Reed had been exceedingly nervous. The ether had acted badly, and nausea and vomiting persisted for 18 hours. He was now hardly recovered from a state bordering on nervous collapse. There was no evidence of peritonitis. This was the beginning of the third day.

[Dr. Reed died on the sixth day after the operation with all the symptoms of intestinal perforation. It is probable that the necrotic caput coli sloughed or that the pus broke through into the general peritoneal cavity. No autopsy was made.—W. C. B.]

Dr. Neff said that he was present at the operation. The case was grave; it had been handled with consummate skill by Dr. Borden, and his would be the credit if Dr. Reed recovered, as all most earnestly hoped.

Dr. Bovée called attention to the interest which attached to the specimen itself. It showed the process of gradual closure of the appendix as a result of chronic inflammation. Had the attacks continued, the lumen would in time have probably become obliterated. This would have been a fortunate result.

OMPHALOPAGUS.*

BY D. S. LAMB, A. M., M. D.,

Washington, D. C.

A male omphalopagus monster, at about the 8th month of fetal life. The union was abdominal, from the umbilicus *downward*, so that the two abdominal cavities were partly fused. The individual organs of each were of the normal number, except that the small intestine of the left individual passed over to the right to end in the small intestine of the right a short distance above the caecum and the large intestine was absent from the left individual, and ended blindly in the right; the anus of each was imperforate. The specimen had been so poorly preserved that the investigation of the condition of the viscera was unsatisfactory. This variety of monster seemed to be rare.

TRANSPPOSITION OF THE HEART.†

BY J. M. B. BANISTER, M. D., Major and Surgeon, U. S. A.

Dr. Banister, in exhibiting the case, said that it was an unusual one; it was the first he had seen in 19 years' work, examining recruits for the army, and the second altogether that he had seen. The peculiarity did not in the least disable the man, and he did not consider that it was sufficient ground for rejecting the applicant for enlistment. It would be interesting to know whether the other organs were also transposed. The case illustrated the point that surgeons should be on the lookout for the abnormality, in making lateral incisions in the abdominal wall, *e. g.*, in appendicitis; and that with symptoms of a left-sided appendicitis, an examination of the heart, showing it to be transposed would throw some light on the diagnosis; and in fact make it quite probable.

Dr. Acker had examined the man at his office. It was a question whether or not the other organs were transposed.

Dr. Shute said that the case illustrated the fact that the surgeon, in making abdominal incisions, should bear in mind the possibility of this peculiarity.

Dr. Claytor expressed the belief that all the organs were transposed.

Dr. Behrend recalled the case of complete transposition of the viscera recently presented to the Society by Dr. Blackburn.

* Reported with specimen to the Medical Society of the District of Columbia, November 19, 1902.

† Presented to the Medical Society of the District of Columbia, November 26, 1902.

EXENCEPHALUS WITH SPINA BIFIDA.*

BY DEWITT C. CHADWICK, M. D.,

Washington, D. C.

The history of this case is as follows :

Mrs. G., age 32, white, was uniformly healthy as a child, her only sickness up to the time of puberty having been a mild attack of measles. She began to menstruate at 14 and has since been very irregular in her periods, going without them at times for four or five months without any apparent discomfort. The flow has usually lasted less than three days and has been very scanty. At 16 she became debilitated and was told she was tuberculous, but recovered and has since been uniformly strong and healthy with the exception of irregular menstruation. She was married at 28 and has only been pregnant this once. Owing to the menstrual irregularity it was difficult to date the beginning of pregnancy, but from the data furnished by the first fetal movements, it was concluded that full term would be reached about the first week in January, 1903, thus making the monster one of about 7½ month's gestation, at delivery.

Her mother died at 61, of cancer of the uterus and her mother's mother of cancer of the stomach at fifty odd years. Her father is living at 67 years. There is no history of any monstrosity in either branch of the family. For three generations, on the maternal side, the family name has not changed, her father having married a woman of the same name, her grandfather having shown a like fondness for the name. It is said that none of the marriages were between persons at all related.

At about the second month of pregnancy she was badly frightened by a cat jumping unexpectedly on her at night. At the fourth month she had a severe fall while endeavoring to get into a crowded conveyance at the seashore. Again at the fifth month she had another fall. She was not visibly injured by either.

Shortly after the beginning of pregnancy the fetus seemed to grow with unusual rapidity, so that at the time of rupture of the bag of waters she looked to be at full term with twins or triplets.

The urine was frequently examined, but contained no albumen.

* Reported with specimen to the Medical Society of the District of Columbia, November 26, 1902.

Two days before delivery a slight bloody discharge was noticed and for several days she continuously suffered pain.

Early in the morning preceding delivery the bag of waters broke. I found a two-gallon slop jar and a chamber vessel filled with amniotic fluid, and the bed saturated. A face presentation was made out, but I was unable to convert it into an occipital one. I then sent her to the hospital, where, with the assistance of Dr. Kelley, she was anaesthetized, a podalic version done, and the monster delivered, the legs and hips coming down easily, but the shoulders with difficulty; the sac containing the brain rupturing in delivery and its contents escaping with the flow. The mother has made a rapid, uneventful recovery.

This seems to me a case of exencephalus rather than anencephalus, as the monster did have a brain.

Dr. Ballard of Chicago, in the *American Gynaecological Journal*, describes a case almost identical with this, except that there was no spina bifida, and which he called exencephalia. He says, concerning the causes of such monsters:

"Among the several hypotheses entertained, three only are worth mentioning, and of these the second alone seems philosophical. They have been attributed:

"1. To the influence of the maternal imagination on the fetus *in utero*. Such injurious impressions have undoubtedly often been produced upon the women who have subsequently given birth to monsters; but, on the other hand, the association is far from being constant. Further, such impressions to be operative must occur before the fifth month of pregnancy; yet in many of the most apparently plausible cases the perturbing influence occurred only shortly before birth. In any case the mechanism of the influence, even when it exists, is at present quite inexplicable.

"2. To accidental changes experienced by and morbid influences acting directly upon the fetus during its uterine existence, as mechanical injuries (blows, kicks, falls) and diseases affecting it.

"From the experiments of several observers, it has been shown that by submitting hens' eggs to various mechanical influences during incubation, the development of the embryo may be interrupted or modified in such a manner as to give rise to malformations; and many observations tend to prove that such influences affecting the uterus in the early months of pregnancy produce in

like manner certain malformations by causing an arrest of development.

“3. To a primitive defect in the germ. Cases of supernumerary fingers and toes which fall under this division of the classification are probably due to an excess of formative action in the part, and may be attributed to a direct hereditary taint existing in one or both parents causing a repetition of similar deformities in different offspring.”

Dr. D. S. Lamb said that this was a common form of monstrosity, open skull and open spine. The laminae of the vertebrae were horizontal to the bodies. He doubted whether there had been any brain tissue in the skull, although some material closely resembling it was said to have escaped at the time of birth. The presence of a mass of brain material had suggested the name *pseudencephalus*. The meninges were present. The abnormality must have appeared before the end of the third week, for the medullary groove then becomes a canal. If the side walls of the groove do not form, the brain and cord do not form, because they are developed from the cells of this canal. The most probable explanation therefore of the case reported was that some accident to the mother at this early period produced an adhesion of the amnion to the growing embryo in such a way as to prevent the covering over of the medullary groove to convert it into a canal.

Dr. A. F. A. King spoke of the theory of Lebedeff, who thought that anencephalia were due to the production of an abnormally sharp cranial flexure in the embryo. The occurrence of polyhydramnios in Dr. Chadwick's case was a common event, which however had been satisfactorily explained.

Dr. Keech said that the specimen was very interesting and that all such cases should be reported. He had seen several monsters, and recalled one in which there was an entire absence of cranial bones above the level of the ears. The condition was discovered just before delivery, which was at full term. The brain was absent above the medulla, but the membranes were present. Otherwise the child was normal, though small. He accounted for the malformation by the fact that the mother had received a severe shock in the first month of pregnancy due to the loss of a foot by her husband in a railroad accident.

Dr. Chadwick, in closing, said that the material which escaped looked very much like brain matter. For half an hour after birth the legs of the monster would jerk violently when the exposed part of the spinal column was irritated.

MARKED ELONGATION OF THE CERVIX UTERI.*

BY J. WESLEY BOVÉE, M. D.,

Washington, D. C.

Mrs. W., white, age 45, mother of two children, the last of whom was born in 1900, came under his observation in October, 1902. She had been married twenty years. Menstruation had been regular, lasting three days, painless, the amount of flow being small, and the last period was September 1. Since the birth of her last child she had suffered from "falling of the womb and bladder." Since July last she had noticed a gradual diminution in amount of menstrual discharge. Examination revealed the cervix protruding about two inches through the vulva and covered with a very much thickened and tough mucous membrane; it was pushed back into the vagina with considerable difficulty. On the 31st of October he removed the uterus and appendages. The canal of the uterus was 6 inches in length, that of the cervix $4\frac{1}{2}$ inches, and that of the vaginal portion of the cervix $2\frac{1}{2}$ inches. The ovaries were mere cysts. The broad ligament stumps were sutured to the fascia of the upper end of the vagina and to each other in the median line. The specimen, after being acted on by formaldehyde solution, showed very nicely the macroscopic changes in the mucosa exposed to the extravulvar influences.

Dr. J. Taber Johnson said that it was customary in these cases to amputate only the elongated portion of the cervix. To remove the entire uterus in all cases would be to apply a remedy worse than the disease or at any rate out of all proportion to the severity of the symptoms. Here however the case was exceptional; the woman was approaching the menopause and the ovaries were cystic. He believed that Dr. Bovée meant to apply this treatment only to women who were approaching or had passed the menopause.

Dr. Bovée agreed with Dr. Johnson that in young women, hysterectomy for elongation of the cervix was not advisable. This woman's age, the condition of the ovaries and the fact that hysterectomy was as easy of performance as amputation, led him to adopt the operation which he had performed. In closing, he described the method by which he had closed the wound.

* Reported with specimen to the Medical Society of the District of Columbia, November 19, 1902.

HEMORRHAGE IN LEFT LENTICULAR NUCLEUS
WITH LEFT PTOSIS; OTHERWISE RIGHT HEMI-
PLEGIA. ORIGIN PROBABLY EMBOLIC.*

By D. S. LAMB, A. M., M. D.,

Washington, D. C.

From a large mulatto man, age 40, who died 12 hours after admission to hospital. Was unconscious all the time in hospital and no history could be obtained; well nourished; left eyelid drooped; mouth drawn to the left; no use of right limbs; breathing shallow, slow, 26, 22; pulse 68, 54, 140, very weak; heart sounds inaudible; axillary temperature 97, 96. Remaining examination negative.

I made the necroscopy; found the brain congested; almost all the left lenticular nucleus occupied by a hemorrhage; small hemorrhage in caudate nucleus; internal capsule not involved. Bony growths in falx cerebri. Heart 16 oz.; old patch of pericarditis. Ascending aorta atheromatous and showed a beginning aneurismal dilatation near which was an *adherent small clot*. No adhesions or fluid in pleurae; lower lobes of lungs darkly congested and showed hemorrhages. Old adhesions and a degeneration of liver. Spleen small and darkly congested. Small infarction of right kidney. Deep congestion of cardiac end of stomach, with some mucous and bilious contents.

Dr. J. Ford Thompson had operated in a similar case about 3 months before. About 3 years before, the man had had an apparent attack of apoplexy which resulted in aphasia and paralysis of the right side, and for this condition he consulted Dr. Thompson. An exploratory examination of the brain was made at Garfield Hospital. A large flap was raised on the left side of the skull, and the meninges were exposed; when the dura was incised a quantity of serum escaped; the brain was examined, the finger being passed around and over the region of Broca's center but not penetrating the brain substance. The flap was replaced, and the patient made a good recovery, but with no permanent benefit; he was now in the same condition as when first seen. Dr. Thompson believed that an exploratory examination was justified in such cases.

Dr. J. Dudley Morgan spoke of a case now at Garfield Hospital, the patient having left facial paralysis and right hemiplegia.

* Reported with specimen to the Medical Society of the District of Columbia, December 10, 1902.

Speech was also affected. There was a marked lesion of aortic valve.

Dr. Chappell inquired whether there was any recorded case of recovery after operation for paralysis of this kind.

Dr. Thompson replied in the affirmative. The prognosis was best when the lesion was the result of traumatism.

APPENDICITIS FROM A PHYSICIAN'S STANDPOINT.*

BY E. CASTELLI, B. A., B. Sc., M. D., L. M. (Dublin),

Washington, D. C.

The treatment of appendicitis is of a certainty a subject upon which the medical profession of the entire world has exhausted every argument, and to present additional views thereon at this moment is to ask for toleration or to acknowledge presumption. Yet as each scientific view, no matter how unimportant it may appear, is as a grain of sand brought to the edifice of knowledge, such a view may in this light be tolerated.

Between the ideas of Metier, who in 1827 considered the possibility of treating appendicitis by surgical intervention, and those of Dieulafoy, who absolutely does not admit a medical treatment for this ailment, there must exist a rational medium.

It is certain that appendicitis is an affection in which the clinical education of the physician involves a serious responsibility as to its treatment, and in truth today, when the public believes itself somewhat acquainted with this subject, the rôle of a physician in a case of appendicitis is an extremely delicate one.

As to the proper treatment of appendicitis, two distinct classes exist among physicians and also with the public, viz: the interventionist and the non-interventionist. Dieulafoy, Poirier and Keen declare that appendicitis always requires an operation; Jacoud formerly entertained the opinion that no such necessity could ever exist, while Broca, Sonnenburg, Rotter and others admit only under special circumstances the necessity of an operation being performed.

The same draconian discrepancies may also be observed in other branches of medicine, for example in obstetrics, wherein the question of inducing premature labor in a narrow pelvis has created two absolutely irreconcilable schools. In the school of Pinard it

* Read before the Medical Society of the District of Columbia, December 3, 1902.

is declared that under no circumstances should premature labor be induced, but that symphysiotomy or the Caesarean section must be performed; while Budin, as eminent an obstetrician as Pinard, advises always the inducement of labor in cases of narrow pelvis, never allowing symphysiotomy, and admitting the Caesarean section only in special and well-defined cases.

And is not this excessive disparity of views, so notably existing in the scientific world of today, as well as in all other branches of human activity, an index of the fierce struggle going on in the contest for intellectual supremacy? But we may ask, Are the conflicting views advanced always really conscientious ones, or are they not at times the demonstration of a tendency to scientific demagogism?

I have listened to the teachings of eminent clinicians in many countries; have assisted at operations in many pre-diagnosed cases of appendicitis, and in some instances have myself treated patients alone who were suffering from this ailment, from all of which I have become convinced that mistakes are, or may be made, by us all. To establish systematic rules in medicine is possible, but rules necessarily presuppose a perfect understanding of the laws of physiology and pathology governing the functions of each organism. Let us occasionally turn our attention backward to our past masters, remembering that while they were unacquainted with Pasteur, they yet left to us treasures of clinical knowledge; not troubled by the microbe, they devoted all their spirit of observation to the patient himself, finding that the natural power of resistance to the disease was a personal factor and not a general one.

We are sometimes forgetful of so important an idea, not remembering that the physiological processes in each organism are always in the path of pathological ones; that the laws regulating our intervention in appendicitis are dependent upon the development of the physiological processes of the special organism with which we have to deal.

We all know that the pathological processes in each organism have the same activity as those of the physiological ones, and our medical experience, when aided by observation, is sufficient to delineate among our patients well-defined classes of individuals. There are those who from the period of conception have shown a general *low vitality*; their period of intrauterine life gave no

trouble to the mother; they came into the world without crying; they develop slowly; their illnesses, either in childhood or as adults, never assume an acute character; the crisis in the different diseases with which they are affected is accomplished by lysis, and their recovery is always slow as are likewise all their actions in life. These persons, possessed of small ambitions, are inactive, and if born with criminal tendencies, are never murderers, but generally become thieves, liars or forgers. Their lives are slow and even their last agony is a lingering vacillation between life and death.

In opposition to these classes we see others who come into the world after a long, tedious intrauterine existence, who as children are restless, and as adults are equally so in every circumstance of life. If sick, their illness assumes from the beginning an acute character, and with them the crisis of recovery is always violent. Their convalescence is rapid, while their daily activity and methods of struggle and of action demonstrate constantly a high vitality. With these persons, as I have already remarked, a disease is wont speedily to assume a serious character, on which death follows with rapid strides.

This description is the real guide of the physician in the treatment of his patient, and hence this consideration leads me especially to the subject of appendicitis.

What is appendicitis? It is an inflammatory process. Inflammation means cellular activity, and upon the degree of cellular activity and upon that only depends the quality of exudation and the consequent form of appendicitis. In appendicitis as in any other inflammation the quality of the exudation may be serous, catarrhal, fibrinous or necrobiotic, and all these different exudations are only phases of the same process. Now if the inflammation has a slow course, the natural processes of repair have time to equilibrate the processes of destruction, and at a phase far from necrobiosis, viz: far from the result which makes appendicitis fatal.

I do not ask that my statements be accepted as Gospel truths, but I do ask that you consider the point presented and that you make statistics thereon.

Who are the patients that succumb and who are those that recover under a conservative treatment? The strong patients die while the weak recover.

When a few years ago I first began to study seriously the subject of appendicitis, I consulted one of the most complete compendiums of statistics published, viz: that of Porter. In the cases not operated upon are noted therein as cases of recovery 88.3 per cent., and those operated upon within the forty-eight hours—a period admitted by the majority as the best for intervention—the cases of recovery were given as 80.8 per cent.

In my estimation, now that through further observation and experience my knowledge of the subject has been increased, the higher mortality in operations is given through that X per cent. of patients who while too weak to support the shock of the operation have still sufficient vitality to bear the attack; while the deaths in cases not operated upon are given by that X per cent. of organisms of high vitality in which the course of the attack, on account of the cellular hyper-activity, has been uncontrollable.

I say further, you have all been called to the bedside of a patient, you have discovered in him the cardinal signs of appendicitis, viz: (*a*) sudden acute pain, (*b*) unnatural rigidity of abdominal walls, and (*c*) hardness in correspondence to the point of McBurney.

You have diagnosed appendicitis, and owing to the condition of pulse and temperature you have claimed immediate surgical intervention. The laparotomy is performed, the appendix is excised, and to your surprise you see an appendix that shows no sign of inflammation. Have you noticed to which of my classes the patient belongs? You may be sure that it is not to a very strong one.

Last summer, while in Italy, I had the opportunity of renewing my investigations upon the subject of appendicitis from my own special point of view, and in order to set forth more clearly these researches it is necessary to explain in advance certain features of Italian medical life.

In Italy, where to meet the exigencies of an overgrowing population every inch of land has been cultivated to its highest degree, and where the subdivision of property has quite approached the economic ideal standard, the agricultural class is found scattered in groups over the entire Italian territory, forming thousands of little villages, some of which are completely isolated from the world, not being connected by railroads with cities, and others numbering not more than 300 or 400 inhabitants.

To provide sanitary service for these villages the general government, aided by the small administrative body of each village, became obliged to provide a salaried county physician (*medico condotto*), and especially so in the case of such villages as did not present sufficient attraction and inducement for a *fee* practice.

In such villages is found usually one doctor only, paid annually by the community, who officiates as physician and surgeon, and in some places as dentist and pharmacist, and whose monotonous existence is only compensated for by the high consideration and esteem with which he is regarded by those among whom he lives and labors, and by whom he is considered as friend, brother and father.

Also I may add that these modest benefactors of humanity, these hermit county doctors, contribute much more to science and to medical progress than the majority of those physicians idling in the clinics, waiting the possibility of a professorship, and I here take occasion to state that many of the best Italian physicians began their career as plain country doctors. Professors Murri, Bassini, Loreta, Baccelli, Bottini, etc., have been country doctors, and it is easy to understand why such men of superior intelligence should succeed, notwithstanding their humble beginnings. In these villages the young physician does not engage in the struggle for competition or money, because his salary is sufficient for his needs and he has no competitor to encounter upon the ground. Not being disturbed by professional struggles and responsibilities, necessarily he devotes his spare hours to making ready for every possible emergency of his multiform practice.

Now these facts lead me to say that in these villages high surgery becomes a very difficult problem to solve. The performance of laparotomy in an emergency case is beyond possibility when the physician is entirely alone and without the assistance of even a capable nurse. So it matters not whether the physician in these villages be an interventionist or not, he is forced, willingly or unwillingly, in a case of appendicitis, to subdue his surgical tendencies, and it was for this very reason that I was able to gain from those country doctors the true results of the conservative treatment of appendicitis. It is not to be understood however from this statement that I was able to collect a large amount of statistical information, since for that purpose I had not the time at command, but I was able nevertheless to find statements confirming my

views, and in twenty-nine cases of appendicitis *not* operated upon, I noted twenty-six cases of recovery, this being a proportion of 9 per cent. of deaths.

While I do not claim any considerable value for my statistics thus acquired, yet I am convinced that a consideration of them will prove of interest to many minds and serve as a stimulus for the compilation of statistics of further results.

As a physician, I regard surgery as a branch of therapeutics, and I consider an operation as similar to the administration of a necessary overdose of medicine in cases of lost equilibrium. While my conclusion may be wrong, still I regard the human being physiologically as a superior animal, but always as an animal, in consequence of which he is provided with a natural power of resistance to disease, and that to a degree as strong as exists in the lower classes of animals. To believe that we are merely machines, liable at any moment to become completely out of function, because the surgeon-engineer is not ready to remove the dust from the car-valves, is to underrate ourselves in our own estimation. The natural tendency of my thought is to reduce the necessity of surgical intervention to a mathematical expression, and that without its abuse, since Lister has guaranteed us against the dangers of infection.

In special circumstances, during my medical career, I have had the satisfaction of receiving confirmation of my conservative views.

Some years ago, at the close of the Italo-Abyssinian campaign, through observation of statistics, I expressed my belief that laparotomy on the battlefield, for penetrating wounds of the abdomen, was probably more fatal in results than those accruing from leaving the wounds without surgical treatment. You can well imagine the reception given to such a statement, so little flattering to surgery, claiming for itself infallibility.

Last summer, as a delegate from the Royal Army and Navy of Italy to the Congress of Military Surgeons of the United States, I had the pleasure of sending officially the same statement to the State Government, and corroborated by the statements of General Sternberg and Dr. Senn regarding the Spanish war, and of Colonel Richard Exam on the Boer campaign, that to operate on the battlefield for penetrating wounds of the abdomen is a mistake, that while in cases thus operated upon we find a mortality ranging

from 100 to 70 per cent., yet in those not operated upon, the mortality is only 30 per cent.

In other fields of surgery we may also find that its results do not always justify its excessive practice. In accordance with my own conclusions, statistics must be considered, if we wish to restrict surgery within rational limits. While before operating upon a patient the surgeon guesses upon the probabilities of life or death, I believe the physician equally able and with very good reason to guess as to whether or not medical treatment may be equally successful. But without continuing this subject further, I offer the following conclusions :

(a) In cases of appendicitis, the necessity of surgical intervention within 24 or 48 hours depends in a greater degree upon the physical constitution of the patient than upon his apparent condition. In a strong organism the inflammatory process has a tendency to reach its final stage and it is quite impossible to stop its course. Certainly in these cases the only chance of recovery left to the patient is by an immediate operation, whereas in a weak organism, the inflammatory process goes on slowly toward the final stage, and the natural power of resistance of the organism, together with a rational medical intervention, may be sufficient to check the progress of the inflammation. In these latter cases, an immediate surgical intervention being unnecessary, those who are in attendance upon the patient, who are of interventional predilections, might advise an operation during the period of recovery, when in reality such an operation also if useless, would not be dangerous.

(b) Appendicitis is not always easy of diagnosis and its cardinal signs frequently mask other affections, especially: (1) tuberculosis of the caecum, (2) typhoid fever, (3) pelvic-peritonitis due to disease of the annexes, (4) enteritis dysenteriformis and (5) diseases of the liver. For these reasons I think it necessary to add to the objective examination of the patient the other diagnostic means at our disposal, principally the following, viz: The haematological examination in cases of appendicitis and the serum-diagnosis in cases of intestinal tuberculosis.

Dr. Lavastine proved that during the acute stage of appendicitis an augmentation of the eosinophiles, polynucleated corpuscles, is remarkably noticeable in the blood. It is my belief that the eosinophilia is the expression of lymphangitis interstitialis with

folliculitis, a condition which characterizes anatomically the mild cases of appendicitis. This eosinophilia does not exist after the excision of the appendix, neither does it exist in any of the other inflammatory processes simulating appendicitis.

From these considerations I have deduced the conclusion that in doubtful cases of appendicitis, an examination of the blood might contribute the confirming data of diagnosis, and if an intervention were judged necessary, it would take place at a more favorable time than that usually selected, viz: when all the symptoms shall have become well developed.

In regard to the diagnosis of tuberculosis of the caecum, we could adopt the serum-diagnosis of Aloing and Courmont, which has demonstrated in tuberculosis the existence of the phenomenon of agglutination similar to that of Widal in typhoid fever.

I am convinced that a careful study of statistics on appendicitis would result in this, that the disease would be regarded as less serious, and it would incite the physician to a more thorough and attentive consideration of its medical treatment. In addition to this effect, it would create greater confidence in the mind of the people generally and in that of members of the medical profession itself. We would not then see physician and patient living remote from surgical centers, when confronted by the dread disease, appendicitis, suffering hours of agony in waiting their only salvation, the surgeon, but each rather would strengthen the confidence of the other, their efforts being directed reciprocally in the line of appreciation of a rational medical treatment.

If our profession is still a humanizing one, we must alleviate the sufferings of the sick, while also rendering less heavy the burden of our own responsibility, through a knowledge of what it requires, and even in the worst circumstances which time and surroundings may present, the calm assuring word will bring conviction to the patient, while from his bedside vanishes the specter of Death.

DISCUSSION.

Dr. William Ward questioned if appendicitis was a medical or surgical disease. This depended largely on the form of the disease, whether it was of the mechanical or the septic variety. The former was amenable to medical treatment; the latter was not, and the treatment of this form was purely surgical. As an illustration of the efficacy of medical treatment in mechanical ap-

pendicitis he related a case in which the attack was due to the over-eating of peas. The temperature rose as high as 103.4, and hypodermics were required for the relief of pain. Repeated doses of castor oil caused the passage of large quantities of peas, and cured the attack. Formerly only the septic or surgical variety was recognized, and all forms of appendicitis were believed to be of germ origin. At the present time, though, the importance of the mechanical form was universally recognized.

Dr. A. F. A. King commended the paper as an excellent presentation of the subject, but he could not agree with the author as to the method of treatment without operation. In the twenty-six cases cited as having been cured without surgical interference we had no knowledge as to later recurrences and their results. The frequency with which appendicitis occurred at the present day was very remarkable and would almost suggest contagion or infection as the initial cause. It had been observed to occur very often among nurses and internes in hospitals and sanatoria. A surgeon in the German Hospital, New York city, had recently reported eighty-eight cases operated on within a period of about three months. Dr. Wm. P. Carr, of this city, had operated on a hundred cases, and Dr. W. C. Borden, U. S. A., on seventy-five. The real cause of the disease was as yet unexplained. Dr. King had some views of his own on the subject, which, if on investigation he found sufficiently tenable, he would probably present to the Society at some future time.

Dr. Balloch congratulated Dr. Castelli on his admirable presentation of the subject from a physician's standpoint. Dr. King had pointed out the weak spot in the paper. The question was, what was meant by recovery? To the physician it meant recovery from the attack; to the surgeon it meant recovery from the present and freedom from subsequent attacks; that was the difference. The statement he had made in the discussion on Dr. Hickling's paper last year was true, that in every case of appendicitis which died under medical treatment there was a time when the patient's life could have been saved by proper surgical intervention. Why then argue for medical treatment? The only question was when to operate, whether during the attack or in the interval? The surgeon often had no choice, but he believed that the operation should be performed when possible as soon as the diagnosis was made, and increasing experience only confirmed this view.

In illustration of this he related a case in which the patient was seen on a Saturday night, the diagnosis of appendicitis was made and immediate operation recommended, to which she consented. She was taken to a hospital and the operation set for Monday morning. On that morning the temperature was normal, but the pulse was weak and rapid. She felt so much better that she absolutely refused operation, although it was strongly urged upon

her. On Wednesday she had severe abdominal pain and the pulse and temperature ran up. On Friday she felt so much worse that she concluded that she would be operated on. The abdomen was immediately opened, with the result of finding an abscess cavity in the region of the appendix, containing six ounces of pus, with a fecal concretion free in the pus. She fortunately recovered, but as the case had to be treated by the open method with drainage, there was every prospect of a hernia, which might have been avoided by early operation, to say nothing of the greater ease and safety of the early operation and the lessened period of convalescence. Undoubtedly the appendix had ruptured when the attack of pain occurred on Wednesday.

Dr. Mayfield said that statistics did not appear to be of much value in appendicitis, as the milder cases recovered promptly under treatment and therefore did not figure in them to any extent. Some, like Dr. Balloch, advocated operation in all cases; others, with Dr. Castelli, favored medical treatment in many of them. Which should we choose? The fact was that in appendicitis as in other diseases there were cases of all grades of severity, and the surgeon should first determine the character of the inflammation and whether the case in hand was one of the kind which demanded operation. Some mild catarrhal cases did not require surgical interference; other cases pointed from the first to the need of operation. One's experience usually showed to which class a particular case belonged. Twenty-nine years ago he had an attack of catarrhal appendicitis followed by recovery without operation, and there had been no recurrence of the trouble. In another case which he recalled there were five recurrences in as many years, and finally death. This patient could undoubtedly have been saved by operation.

Dr. I. S. Stone said that the paper was more interesting than many surgical papers which had been presented. He did not believe that it was a unanimous opinion among surgeons that every case of appendicitis should be operated on, although one or two of those who had taken part in the discussion had said as much. There was more truth in Dr. Castelli's propositions than one would at first think. There could be no question that some patients with apparently light attacks died, and others whom we would expect to die, recovered; this could only be explained on the assumption that some persons possessed greater power to resist infection than others. One person, apparently careless as to his own welfare, would resist infection for years; another, who used every precaution to prevent infection, would suffer from repeated attacks.

As to the question of medical or surgical treatment appendicitis was beyond question an infection and there was no known remedy or set of remedies which could cure a chronic inflammation of the appendix or correct the chronic degenerative changes which it

produced. Operation was the only treatment in the vast majority of cases. As an illustration of the beneficial effects of operation he related the case of a boy who had suffered from repeated attacks of appendicitis and was finally operated on. Within three months' great improvement in his general condition was noted, in a very short time his weight had doubled and he was now a strong youth, and had had no more attacks. In another case, in which there had been repeated attacks in a period of six years, the worst possible condition was found at the operation which was finally performed; the abscess had broken into the bowel, the lining of the appendix had sloughed, etc. Could medical treatment cure a condition like this? It was a significant fact that while few surgeons go back to medical treatment, many physicians come over to the side of surgery. A physician who claimed that he could cure appendicitis by the application of leeches discarded his treatment when he saw the condition of things in the abdomen in two of his patients on the operating table.

Dr. Reyburn commended the paper, and said that both sides of the question deserved careful consideration. He did not believe in operating in every case. There was no question as to the propriety of operating in certain cases, but how about the very mild cases? He recalled three instances in which no operation was performed and yet the patients lived years afterward without recurrence of the trouble. What constituted recovery from appendicitis? It was when no sign of a tumor could be detected. As to the time for operating, Treves advised waiting, when there were no active symptoms, until the line of demarcation had formed in the abdomen. He could recollect cases in which he had found at the operation only an abscess cavity, which was easy to treat and favorable to the patient's recovery. Treves reported 1,000 cases operated on in this stage, with only two deaths. Inasmuch as some patients recovered without any operation, it was certainly not demanded in all cases, and certainly not immediately after the diagnosis was made. He commended Treves' method.

Dr. F. R. Hagner agreed with what Drs. Balloch, King and Stone had said. There was a recurrence in at least 50 per cent. of unoperated cases. No patient was known to have been lost from too early an operation. If the patient was seen early, could be carefully observed for any change in condition, if there was no leucocytosis and the pulse was slow and of good volume, it was better to wait, and operate in the interval; otherwise, immediately. Patients who were not treated surgically sometimes recovered from the attack and went around without symptoms, and yet had an abscess in the abdomen. He recalled such a case.

Dr. Neff commended the paper, but could not agree with the writer. There was no medical treatment for appendicitis, or at least there should be none. A certain proportion of cases would recover from an attack, but they were not cured in the true sense

of the word, and there was no assurance of immunity for the future. It was impossible to tell from the clinical symptoms the extent of the pathological changes that had taken place. A gangrenous appendix or a deep-seated abscess often existed when there was a good pulse, no temperature and little or no tenderness or pain. It was a surgical disease and should be surgically treated from its inception. If every case could be operated on within the first twelve hours the mortality would not be one per cent. The cases that should not be operated on were the moribund cases that the physician turned over to the surgeon too late to save life, and which brought discredit on surgery because an operation was necessarily unsuccessful. The time to operate was as soon as the diagnosis was made, *provided* it was made early and no complication existed which would render it unjustifiable, and the environment was such that it could be done with a proper regard for surgical cleanliness. There were very few cases which could not be saved by prompt surgical intervention. Waiting for an interval was a delusion and a snare. There was no way of determining that there would be an interval, and when it did occur it was only in exceptional cases that a patient would lie down *in cold blood* to be operated on. He almost invariably waited for another attack.

The blame for the deaths in appendicitis should be placed where it properly belonged. It was due (1) to the ignorance of the laity, and prejudice against surgical intervention, which unfortunately was only too frequently shared and encouraged by the attending physician; (2) to the medical trifling and procrastination on the part of the general practitioner before the case came into the hands of the surgeon. These statements perhaps sounded dogmatic. They were meant to be positive, for the conclusions were the result of considerable observation and reading, and a personal experience at both ends of the knife.

Dr. J. Dudley Morgan said that no disease threw more responsibility on the physician than appendicitis. It was for him to make the diagnosis and say when the surgeon should be summoned to operate. Unless the case was of the fulminating variety, Dr. Morgan did not believe in operating in the first twelve hours; the best physicians and surgeons said that one could safely wait in the majority of cases from twelve to thirty-six hours, in the meantime having the surgeon in readiness. A majority of the patients recovered anyway. Relapse occurred in only one-third of the cases. He was by no means opposed to operation, but believed that it should only be done when a positive indication existed.

Dr. R. S. Lamb said that he had recently considered the statistics given by John B. Deaver in a recent publication; no name stood higher than Deaver's in connection with the surgery of the appendix. Most of his patients were operated on within the first 6 hours and his mortality was not over 2 per cent. After 36 to 48

hours however the mortality was 33 to 38 per cent. These facts were conclusive.

Dr. Keech thought that the paper would prompt a more careful examination before making a diagnosis in these cases. He could recall several instances in which an incorrect diagnosis had been made. One was the case of a nurse at St. Elizabeth's Asylum who was thought to have malaria; there were several malarial cases there at the time. She was removed to the city and he was summoned. He suspected appendicitis at once and a careful examination convinced him of the correctness of his diagnosis. It was too late to operate that night and he gave a mild aperient. In the morning the pain, tumefaction and fever had disappeared. Subsequently the symptoms returned and a few days later a successful operation was performed. Another was the case of a boy twelve years old. The diagnosis of typhoid had been made. At the end of a week he was summoned and in ten minutes made a diagnosis of advanced appendicitis with probable rupture, and advised immediate operation. The whole abdomen was found full of pus. Carelessness in examining the patient was the cause of the mistake in diagnosis.

There were exceptions to the rule that operation should be performed as soon as the diagnosis was made. The following case was an illustration. He was called to see a boy in the country and made a diagnosis of appendicitis. He opened the bowels by a mild aperient and enemata and kept the patient quiet, and under medical treatment alone he very nearly recovered, but went out against orders and had a relapse. Under medical treatment again he completely recovered and there had been no recurrence in six years. The disease was apparently of the catarrhal variety and it required no operation.

Dr. J. Ford Thompson said that he had listened to the paper with great pleasure; it was the most satisfactory presentation of the subject that he had heard for a long time. Yet he could not agree with the writer in a single particular. He had operated for appendicitis before even the name was known. He had done the old Willard Parker operation—let the abscess alone until it had formed and done all the damage it possibly could do to the abdominal structures, and then open it; the mortality was no worse under this treatment than it was today under purely medical treatment. These cases of "walled-off" abscess had given him his highest mortality. There was no medical treatment for appendicitis, and there was none in sight; it was essentially a surgical disease, and the safety of the patient depended on early operation; the sooner it was performed the better. There was every reason why operation should be done early. He did not believe that 50 per cent. of cases would recover without surgical intervention, as had been stated. In conclusion, he exhorted the physician to

consult the surgeon early, before irreparable damage had been done.

Dr. J. Dudley Morgan said that his authority for asserting that 50 per cent. of the cases of appendicitis would recover without operation was the statements of Bruce and Osler.

Dr. Castelli, in closing the discussion, spoke with reference to surgical intervention during the attack. Surgeons knew that the peritoneum at the beginning of an attack of appendicitis was extremely sensitive and surgical intervention at that time inflicted a very dangerous traumatism and was therefore a serious drawback to the natural process of repair of the organism. Besides, in very many cases, multiple metastatic abscesses were formed not only in the region of the appendix but also in different parts of the intestine. So that the dilemma which confronted the surgeon before opening the abdomen was the following:—

Either he must carefully inspect not only the appendix but also the entire intestinal mass, and thereby risk a fatal issue on account of the shock which such a long inspection would cause; or simply treat the abscess in the region of the appendix, leaving the other abscesses untouched, in which case the liability to infection was increased by reason of the diminished power of resistance of the peritoneum after laparotomy. It was for this reason that patients who had been skilfully operated on, rapidly succumbed to appendicitis after a period of apparent improvement, and not from lack of surgical care but simply from the opening of one of the metastatic abscesses left intact during the operation. In this way we could explain the death of Dr. Reed.

CLINICAL NOTES OF SOME INTERESTING CASES.*

By HENRY D. FRY, M. D.,

Washington, D. C.

Following a precedent established on a former occasion I again present for your consideration a series of interesting cases rather than prepare a paper on any single subject, believing that this will be of greater interest to a larger number of the members present.

In the spring of 1901, I read before this Society and also the American Gynecological Society, a paper entitled "The Relative Merits of BIPOLAR VERSION with Slow Extraction and Accouchement Forcé in the Treatment of Placenta Praevia." I

* Reported to the Medical Society of the District of Columbia, December 10, 1902.

reported 14 cases without a maternal death and I wish to supplement that report with four other cases I have since treated, making 18 cases with no death of the mother.

In the series of 14, bipolar version and slow extraction were employed 9 times; membranes ruptured and delivery left to nature, once; tampon and natural delivery, once; forceps extraction four times, including one application to the aftercoming head following bipolar version. In the second series of four cases one was forceps, one podalic version, and two bipolar version. I think it well to repeat these observations and show what can be done by these methods because so much has recently been said in favor of Caesarean section for placenta praevia. Personally I do not believe there is any place for this operation under these conditions when we can show by other treatment such good results.

The rule I have adopted is to examine thoroughly under anaesthesia any case that bleeds during pregnancy and in this way make a positive diagnosis.

Placenta praevia having been recognized, empty the uterus at once. If labor has come on when the case is first seen it must be treated on its own merits. If the os is sufficiently dilated and the head engaged, apply the forceps and extract slowly. If dilated and the head movable, perform podalic version. If not dilated, open by digital dilatation enough to insert one or two fingers, and turn by the bipolar method. Whether turned by either method, the secret of success is to deliver very slowly. There is no necessity for haste as the infant plugs the cervical canal and effectually stops hemorrhage. Rapid delivery through the undilated parts tears the friable tissue and causes a fatal termination from hemorrhage or sepsis.

I next wish to report a case of MENSTRUAL EPILEPSY cured by hysterio-salpingo-oophorectomy. The patient was a young married woman, had not been pregnant and had epilepsy with each menstruation. At first the attack preceded each flow, but later occurred about the ninth day after its cessation. A careful study of the case was made and the relation of the attacks with the menstrual function noted for some months. Bromide treatment and rest produced no influence over the disease. She had entered a hospital and been curetted before she came under my observation. The patient dreaded each recurrence of the monthly

trouble. During that time she was very nervous, had muscular twittings and finally from two to four well-marked epileptic attacks. She brooded over her condition and was becoming depressed and melancholy. Her husband's health was also impaired from the nervous strain and he suffered from insomnia. Both wished a resort to any treatment that held out a hope of recovery. Examination of the pelvic organs revealed a movable uterus of normal size and position; right tube and ovary normal; the left enlarged, tender and bound down by adhesions. They readily consented to the suggestion to remove the appendage of the left side. The epileptic attacks were so closely associated with menstruation, it was felt that the artificial production of the menopause would be more certain to give relief. This was carefully considered, but the patient was so anxious to retain the function that she decided to try the effect of the removal of the diseased side first and later to have the other side removed in case the first operation failed.

The left tube and ovary were removed April 20, 1901. The next menstruation took place May 15, preceded by a convulsion. A convulsion preceded and two followed the June period.

No relief having been obtained, the husband and wife now wished the other ovary removed. Before consenting to this I requested the opinion of Dr. C. K. Mills, of Philadelphia. The case was fully presented to him and the operation met with his approval. Realizing what a serious matter it was to deprive the young married woman of both ovaries, with the possibility of failure of curing the epilepsy, I obtained from the husband the following communication:

"DEAR SIR: I hereby certify that it is my wish and the wish of my wife to have the operation performed for the removal of her remaining ovary. We have reached the decision of our own free will, and hold you in no way responsible for the ultimate result of said operation."

The abdomen was again opened August 20, 1901, and the right ovary, which was examined and found healthy at the previous operation, was now found to contain a cyst as large as a walnut. Believing the reflex nervous symptoms would be diminished and a more profound impression made on the system by removal of the uterus also, a hysterectomy was combined with removal of the remaining appendage.

A very light convulsion occurred September 5, the period at which menstruation was due. One other occurred in September and two in October. There have been no convulsions now for fourteen months, the nervous twitchings have also disappeared and the patient is in the enjoyment of full health.

Two cases of RETAINED MENSTRUAL BLOOD due to the absence of the vagina have been under treatment. The first case came under my observation about three years ago. The girl was 18 years of age and suffered attacks of excruciating pain each month. Hypodermics of morphia were necessary to control the suffering. An examination showed the external genitalia ending in a cul-de-sac. Rectal exploration revealed a tumor in the pelvis. Guided by a sound in the bladder and the finger in the rectum the tissues were dissected back for several inches until the escape of a quantity of dark, clotted blood indicated that the opening was free. The canal was forcibly stretched and a glass tube inserted. The dark discharge kept up for several days and the patient recovered without any bad symptoms.

Last spring she developed an acute salpingitis in the left side, having remained in good health until that time. A pus tube developed and several weeks later was removed. She recovered and has since been well.

The second case presented the same history and was treated in a similar way, but no fluid was evacuated. The passage dissected between the bladder and rectum led up to a hard, spherical mass that filled the pelvis. There was no sign of a cervix or os. The abdomen was opened and the hard mass proved to be the distended uterus with the cervix entirely obliterated. The left tube was also greatly distended and the manipulation caused the escape of a quantity of dark menstrual blood into the peritoneal cavity. With the hand in the abdomen grasping and pressing downward the distended uterus, a fine probe was used in the vagina at a point diametrically opposite the middle of the fundus. This broke through a membrane partition covering the cervical canal and gave passage to the retained blood. The abdomen was sponged clean and closed, the case treated as the former one and no bad symptoms developed.

The last case was an unusual one of SEVERE REFLEX HEADACHE FROM RECTAL IRRITATION. It developed at the

patient's country home, and at my request she wrote out the following history:

"I had been for three days on the top of the mountain. It was cold March weather, with high winds blowing constantly. I was out doors a great deal, and don't think I ever felt the wind so much. Sometimes I felt a pain across my forehead while walking or driving in the wind, but it was only the pain every one feels.

"The first attack came on in an out-door closet at the instant of evacuation without a single premonitory bad feeling. The pain commenced on the right side behind my ear and extended to the top of my head and well over it. It was very severe, and I had difficulty in getting to the house. I was relieved by a nervous-headache remedy.

"The next day the pain returned with greater severity in exactly the same way and time, but did not yield so readily to treatment, being much more severe. I decided to stay in out of the wind and that night took a cathartic and used the closet in the house. The third attack came in precisely the same way as the others. We were three miles from a doctor, but with a telephone he was there inside an hour. The pain had not entirely gone and he gave me a hypodermic of morphine and said my pulse was not very good.

"I did not allow my bowels to move the day following, and came to the city. The second morning, the one following my arrival, I had but one slight movement, with hips elevated and head below the level. This without pain, though it was a very slight movement. The next day the nurse gave me an enema, but the attack was so sudden and so severe that the bowel was not emptied. In an instant I was off the bed pan and walking the floor. I had two morphine injections at this time. The last attack was by far the most painful and left me very nervous and used up generally."

The patient sent for me soon after her arrival at home in the city, and gave substantially the above history. From her verbal description of these attacks the pain was most severe. Examination of her condition threw no light on the subject. She was perfectly well except when the paroxysm of pain came immediately with the evacuation of the bowels. At my suggestion the next stool was passed with the body reclining and the hips elevated on the bed pan, and no attack occurred. The following evening she felt a desire to go to stool, and the nurse gave an enema. The same position was assumed, but the suffering was so acute she sprang to the floor and was nearly crazed with pain.

The nurse called me by telephone, and the patient groaned and screamed so loudly in the adjoining room I could scarcely hear what the nurse said. The first injection of morphia gave no relief and a second one had to be administered.

The patient came to the hospital the next morning, and the sphincter ani was thoroughly stretched under anaesthesia. No lesion of the rectum was found, but the symptoms were entirely relieved, and no further trouble has resulted from the evacuation of the bowel.

In answer to a question by Dr. J. Ford Thompson, **Dr. Fry** said that in the case of menstrual epilepsy he had removed the uterus to allay the reflex irritability which caused the epilepsy.

Dr. A. F. A. King suggested that the twitchings in this case might possibly have been due to chorea.

Dr. Thompson inquired whether the relief afforded in the case of retained menses was permanent. He related a similar case, in which he had operated a number of years ago, but the relief afforded was only temporary.

Dr. Fry replied that he could not say whether or not the patient had been permanently cured. There had been no recurrence of the trouble in the four years following the operation, but he had lost track of the woman at the end of that time.

Dr. A. F. A. King said that the case of severe pain due to reflex irritation was rare, and asked Dr. Fry why he had stretched the sphincter ani muscle.

Dr. Fry replied that he had done so in order to make a thorough examination of the rectum. No lesion however was found. The patient was now perfectly well.

CASE OF GANGRENE OF SCROTUM IN AN INFANT.*

By J. FORD THOMPSON, M. D.,

Washington, D. C.

Robert M., white, age one month, was admitted November 11, 1902, to Children's Hospital, Washington; family history unimportant; no specific or tuberculous history; labor normal; breast fed; healthy until present illness. Four days ago the right leg became red and edematous. During the following two days the swelling extended up the thigh; the scrotum, penis, foreskin and surrounding parts then became involved, the edema being

* Reported with patient to the Medical Society of the District of Columbia, November 19, 1902.

most marked in the scrotum and foreskin. This condition became rapidly worse during the next two days.

On admission, there was also a very tight constricting band just back of the corona. The scrotum was swollen to three or four times its normal size. On the anterior surface was a dark gangrenous area. The child had not voided urine for fifteen hours previous to admission, probably on account of the constriction back of the corona. Soon after admission he was circumcised, the constriction cut and scrotum incised; from the latter was discharged a small quantity of bloody serous fluid. Soon after the operation urine was voided and the child passed a comfortable night, taking nourishment well and sleeping most of the time.

November 12 nearly all the scrotum was gangrenous, sloughing away in large portions, exposing the testicles; edema of surrounding parts much less marked, having almost disappeared from right leg and thigh; hot compresses of saturated solution of boracic acid were applied. 13th, much better in every respect; scrotum till sloughing away in small pieces. 14th, the parts looked much better, the gangrenous tissue had all separated leaving healthy looking granulating surfaces. 15th, still improving, right ankle edematous and red. Carbolyzed oil dressings substituted for hot compresses. 16th, still improving, swelling of right ankle and foot less marked. 17th, edema of right foot hardly noticeable. Edema however appeared in left leg and foot, and by 9 P. M. the foot was almost twice the normal size, very tense and red. Two incisions in the dorsum were then made, considerably relieving the condition. Granulating surfaces still looking healthy. 18th, the parts improving. Slight swelling about the right ankle. Left foot still much swollen, growing worse during the day, rendering another incision necessary at 9.30 P. M. 19th, not so well; edema appearing on anterior surfaces of fore arms. A fluctuating tumor about half the size of a walnut has appeared over spinous processes of lumbar region.

[The baby progressed favorably, the wound rapidly healing by granulation, and the general condition improved until December 4. The wound had then almost entirely closed, covering the testicles. The baby had gained more than a pound in weight. December 5, it was taken suddenly ill; edema beginning in the feet, extended rapidly up the limbs to the body. It refused nourishment,

the edema still extending. Died December 7, apparently from a profound toxemia. A post mortem examination could not be obtained.—E. L. MASON, M. D., *Children's Hospital*.]

In exhibiting the patient, **Dr. Thompson** said that this was the first time he had seen gangrene of the scrotum in an infant. He believed it a case of sepsis. One or two abscesses had appeared elsewhere in the body. The prognosis was unfavorable.

Dr. T. C. Smith asked whether gangrene of the scrotum was common, even among adults. He had a case several years ago in which the trouble was due to heart disease. The testes were exposed. The man lived a week after sloughing began.

Dr. James Stuart said he saw a case in an old negro last spring. He believed that it was due to extravasation of urine. The scrotum sloughed off, leaving the testes hanging.

Dr. Thompson said that he had seen many cases in adults, all of them having been caused by extravasation of urine. Two occurred in the course of typhoid fever. He had never seen an instance in which the gangrene resulted solely from edema. His first case was the worst; the scrotum sloughed off and the testes were left hanging by the cord; the man recovered.

Dr. S. S. Adams said that he had asked Dr. Thompson to present this case on account of its rarity. He had seen many cases but never one in which the course was as rapid as in this. No one dreamed that the gangrene would occur; it was thought that cutting the constricting band would relieve the symptoms for which the child had been brought to the hospital. But in less than a day the greater part of the scrotum had sloughed away. He had never before seen a case like it in an infant.

CASE OF CARCINOMA OF BLADDER.*

By FRANCIS R. HAGNER, M. D.,

Washington, D. C.

White man, age 71, married, three children; denied any venereal disease. Always enjoyed good health until 5 months ago. August 1, 1902, began to pass blood in the urine and shreds of tissue at times. Urination frequent, force of stream diminished, otherwise no discomfort. Gradual loss of flesh. November 25, was examined by Dr. Hagner for the first time; patient said he felt well except for weakness. Pulse rapid and intermittent, arterio-fibrosis marked. Heart enlarged, no valvular murmurs. Urine contained considerable blood having the appearance of

* Reported with specimen to the Medical Society of the District of Columbia, December 10, 1902

coming either from bladder or urethra. Shreds were present containing fibrin and some epithelial cells; urine ammoniacal. 26th, endeavored to use cystoscope but the hemorrhage was so free that the field was immediately obliterated.

He was examined with a searcher to exclude the possibility of stone, and to locate a growth. Could distinctly feel a soft slightly resisting mass on lower left vesicle wall. When the searcher was drawn well forward so that its beak rested on the prostate and rotated, the mass could not be felt. Some hemorrhage followed the examination and shreds of tissue came away. Rectal examination found the prostate hard and resisting, its lateral lobes slightly enlarged. I neglected to examine the seminal vesicles and vas deferens. If that examination had been made I am sure it would have been possible to diagnose the condition found in these organs at the autopsy.

The diagnosis made was carcinoma of the bladder, and I advised against operation as the general condition was so poor. He was given normal salt solution irrigation in the bladder by gravity, no catheter being used. Some improvement was noted: urination became less frequent and less blood was passed. He died suddenly December 6. Permission was given by the family to remove only the bladder.

At the necropsy, I examined all the abdominal viscera including the kidneys; all appeared normal. Pelvic glands enlarged. Bladder contained 3 ounces of bloody urine; a mass was noted on the left wall just above the ureter. Indurated base very vascular and ulcerated. Probably the most interesting condition of the specimen was that of the seminal vesicles, and vas deferens, which were enlarged, of stony hardness and filled with calcareous deposit. I believe this a rare condition as I have not seen it described. I would very much like to hear from any member of the Society on this point.

Dr. E. F. King spoke of the use of the cystoscope in cases of this kind, and recommended particularly the Louis cystoscope.

Dr. Vale expressed doubt as to the malignancy of the growth.

Dr. Hagner, in reply to Dr. King, said that he had used the Louis cystoscope. In answer to Dr. Vale, he said that he also had doubts as to the malignancy of the tumor.

[The growth had the appearance of malignancy; the microscopic characters not yet determined.—D. S. L.]

ANNUAL ADDRESS OF THE PRESIDENT OF THE
MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA,
DEC. 17, 1902.

By SAMUEL S. ADAMS, A. M., M. D., Washington, D. C.

Ladies and Gentlemen : The history of this Society in past years is replete with incidents of scientific and legislative interest, but the events which have occurred in 1902 will add another page, unique in contents and unparalleled in importance. The distinguished founders of our Society exhibited marked enthusiasm in its organization and livelihood, and its treasurer labored hard to extricate the treasury from a chronic state of emptiness, while we, their heirs and assigns, have amplified the enthusiasm, stimulated its growth, and increased its monetary surplus to such proportions that it is unaffected by the weekly assaults, so safely is it defended by our ever-watchful and trustworthy guardian of the exchequer.

It is a matter of pride that the dream of many of our members has been realized in the successful establishment of a journal. With rare judgment, great business capacity and journalistic acumen the editors, at times under most discouraging circumstances, have presented to us a bi-monthly medical journal of which we should feel proud, and to which our united efforts should be given in building for it a lasting foundation. To many the undertaking seemed stupendous, but the difficulties were overcome by those who knew not defeat!

The high character of its literary work entitles this Society to the first rank. There is not another medical society in this country which holds weekly meetings of so great scientific interest, at the same time having so large an attendance. During this year the papers read have been of marked merit and several new subjects have been discussed. The paper of the distinguished American Orthopaedic Surgeon, Dr. V. P. Gibney, of New York, received the plaudits of those who heard it read ; and the operative work of the Society's guest, Professor Adolph Lorenz, of Vienna, was a surgical revelation long to be remembered by those who saw it.

The attendance at the regular meetings has greatly exceeded that of any previous year, and is partly due to the increased interest of the regular attendants. Soon after my inaugu-

ration, a plan to add to the average attendance was adopted. Each week letters were written to five or more members, urging them to attend the meetings, and five more were written to members of the Medical Association, District of Columbia, inviting them to attend until they could become members. This plan was pursued until all such had been asked. The success was most gratifying, for we soon greeted members who had not attended the meetings for years, while the non-members soon became eager to join the ranks. The smallest number at any regular meeting was 39, the greatest 125, and the average 75.

In 1894, when the Society received an unusual impetus under the guidance of that prince of parliamentarians, Dr. Busey, thirty-five active members were elected, the average attendance was 53, the greatest number present at any one meeting being 105 and the smallest 48.

It is also most gratifying to announce that, excepting seventeen members, every other member attended at least one meeting during the year.

The increase in membership has been phenomenal, and surpasses by far that of any previous year. Sixty-six have been elected members and sixty-four have qualified by signing the constitution. These new members were obtained by personal solicitation through the courteous co-operation of twelve of the younger men of the Society. By this means men who had been practicing medicine in this city for more than twenty-five years now became members. There are others who should become members and, if their attention were called to the importance of uniting with us in furthering the scientific work by lending their youth and energy, at the end of 1903 there would remain but few qualified physicians not members of this Society.

The legislation enacted under the guidance of the executive committee is deserving of our highest commendation. The legislation authorizing the appointment of guardians for the property of persons addicted to the use of opium, cocaine, etc., that regulating the production and sale of viruses, serums, etc., and that for the promotion of anatomical science, are of the greatest value to the public. The Society may well entrust its legal rights to this committee.

Inestimable good has been accomplished by the introduction of the social feature into the life of the Society. At a small personal

expense we have been brought together in delightful comradeship; our cares have been set aside; our acquaintances increased; our opinions of men enhanced; and our views broadened. Let us continue to have an occasional evening at "Rauscher's!"

Would that our joys could have been uninterrupted! But alas! the cruel hand of Death, in the twinkling of an eye, robbed us of the courteous and scholarly Armistead Peter, of the versatile and intellectual W. W. Johnston, of the genial and honest T. Ritchie Stone, of the noble and self-sacrificing John T. Winter, of the great and universally renowned Walter Reed, and of Joseph Scholl, who also, in his active days, performed his full duty to mankind.

Through the courtesy of Dr. W. C. Woodward, I have been enticed from the discussion of a scientific theme, and led through the musty pages of several volumes which were recently resurrected from the tomb of our Society's library. Come with me then to these sacred archives and help me cull from them:

The Achievements of the Conservators of the Public Health of the City of Washington during fifty years, 1819-1869.*

At the conclusion of his address Dr. Adams said:

Early in the term, twenty-five members subscribed ten dollars each for a prize essay fund, to be awarded to the competitor who should be adjudged worthy of it, by a committee selected by the executive committee. The competition was limited to those members who had graduated since 1890. In asking for such subscriptions, it was distinctly stated that the idea was to encourage the younger members, to stimulate their scientific knowledge and to exhibit their literary attainments, and was in no wise meant to reflect on those who had graduated prior to that date. On or before the first of November, six essays were forwarded to me and were soon thereafter handed to the executive committee. At a meeting of this committee, three physicians, not active members of this Society, representing the Army, the Navy, and the Public Health and Marine Hospital Service, were selected to examine the papers and award the prize, in case any essay was thought to be worthy of it. Each gentleman declared that he did not know any one of the contestants, nor had he knowingly assisted any one of them in the preparation of his

* The main part of this address was printed by the United States Senate.

paper. The same can be said of the executive committee and your presiding officer.

This select committee has awarded the prize to *Buscador*, writer of the essay on "Shock", and it is now one of the greatest pleasures of my life to hand to Dr. Frank P. Vale a check for \$250, an amount so cheerfully and generously donated by his colleagues.

Honorable mention is made of the essay on "Leukemia" by *Stomatitis*; and I congratulate Dr. J. B. Nichols.

Fellow members, it is an honor to preside over such a body, so I thank you for honoring me.

In Memoriam.

DOCTOR WALTER REED, MAJOR AND SURGEON U. S. ARMY.

WHEREAS, The Medical Society of the District of Columbia has sustained an irretrievable loss by the death of WALTER REED, who died at 2 P. M., November 23, 1902, from appendicitis, for which an operation had been performed five days before:

*Be it Resolved,** That in the death of DR. REED, the Medical Society has lost one of its most distinguished members, whose best efforts were always at its disposal and upon whom it had learned to rely as an able, calm and accurate exponent of scientific medicine.

Major Reed was born in Gloucester County, Virginia, September 13, 1851, and was a graduate of the Medical Department of the University of Virginia, 1869, and Bellevue Hospital Medical College, 1872. He was appointed Assistant Surgeon, U. S. Army, June 26, 1875; promoted Assistant Surgeon with the rank of Captain, June 26, 1880; Surgeon, with rank of Major, December 4, 1893, and at the time of his death was first on the list of Majors in the Medical Department.

He served with distinction as Medical Officer at various army posts in the "Far West," and as his skill and devotion extended to both officers and enlisted men alike, he endeared himself to all classes in the command.

During his service at Fort McHenry, Maryland, in 1881, and

* The preamble and resolution were adopted December 3, 1902.

again while Attending Surgeon and Examiner of Recruits at Baltimore, from October, 1890, to October, 1891, he made special studies in bacteriology and pathology at the Johns Hopkins Hospital, and after a tour of service at Fort Snelling and St. Paul, he was selected by the Surgeon General, in August, 1893, as Curator of the Army Medical Museum, where he continued his studies which ultimately secured for him fame and distinction.

During the Spanish-American War, he was President of the Board of Medical Officers to investigate and report on the prevalence of typhoid fever in the Army, and the Commission, strongly impressed with the agency of flies as carriers of this disease, recommended the collection of excreta in galvanized-iron tanks, which method was adopted and was followed by a cessation of the disease.

His greatest achievement for science and humanity was his contribution to the cause, spread and prevention of yellow fever. Starting from Finlay's theory of the agency of the mosquito in the dissemination of this disease, the commission of which Dr. Reed was the head made a series of painstaking experiments and demonstrated conclusively the causal relation of *stegomyia fasciata* to yellow fever epidemics and disproved the theory that the disease could be conveyed in *fomites*, or that it was contagious in the ordinary acceptation of the term.

The practical value of this discovery, which in point of importance and far reaching beneficence, ranks only second to Jenner's discovery of vaccination, has been proved by the complete eradication of this scourge from Havana.

Major Reed has demonstrated how to rid the world of yellow fever, but his studies as to the etiology of the disease were interrupted by his untimely death; he had, however, arrived at the conclusion that the disease was not due to Sanarelli's *bacillus icteroides*, but was probably caused by some ultra-microscopic organism. Dr. Reed was a clear, forceful writer and speaker; all of his facts were collected with the utmost care and presented in a concise, logical and convincing manner, and his crowning work shows the highest degree of scientific accuracy, combined with calm judgment and discrimination, qualities which are not only of the utmost importance in searching the causes of epidemic diseases and tracing their progress, but which would have also fitted him for the highest position in his corps.

In every sphere of activity whether as a medical officer, author, teacher or investigator, he has acquired a distinction which rightly places him in the first rank of illustrious American physicians. His labors in behalf of science and humanity have been recognized by Harvard, Ann Arbor and the American Medical Association, and he has borne his honors with accustomed modesty and innate dignity. Dr. Reed was singularly free from all mean self-interest and ambition, and was ever ready to give full credit to his colleagues for their share of the work which made him famous. We have simply to recall his glowing tribute to that brave young soldier, Kissinger, from Ohio, who on December 5, 1900, was the first to volunteer to be bitten by infected mosquitoes, with the only provision that he should receive no pecuniary reward, since as he expressed it, he was actuated "solely in the interest of humanity and the cause of science." Such exhibition of moral courage, in the opinion of Dr. Reed, has never been surpassed in the annals of the Army of the United States, and we will add, could never have been inspired except by a man of Dr. Reed's greatness.

His lips are silent ; no longer will the sound of his musical but decisive voice be heard within these walls, nor his personal magnetism and discerning mind delight, instruct and charm his listeners, but his deeds will live and his example will be an inspiration to the present and future generations.

Dr. Reed's death in the prime of life, in the zenith of his distinguished career, is a severe blow to scientific medicine, his corps and the medical profession which he adorned. This Society, while expressing the sincerest grief at the loss of our distinguished associate, whose personal qualities commanded our highest friendship and respect, is not unmindful of the irreparable loss sustained by his beloved family, to whom we beg to offer our heartfelt sympathy in the hour of their great affliction, united with the fervent hope that a grateful Nation will recognize the economic value of Dr. Reed's discovery and make adequate provision for those who were dependent upon him for support.

GEO. M. KOBER,
D. K. SHUTE,
F. S. NASH,
Committee.



MEMORIAL MEETING OF THE MEDICAL SOCIETY OF THE
DISTRICT OF COLUMBIA TO MAJOR WALTER REED,
SURGEON U. S. ARMY, DECEMBER 31, 1902.

Introductory Address by SAMUEL S. ADAMS, A. M. M. D., *President.*

Ladies and Gentlemen: Once more we have been called together to pay tribute to the memory of an honored colleague, whose counsel we have enjoyed for nearly a decade. The possessor of a striking personality, unusual reasoning power, an unbiased judgment and a determination to enforce his convictions, Dr. Walter Reed could not fail to adorn and stimulate this scientific body as well as the military service of the United States Army. The aged die, and we wonder not, believing that they have fulfilled their mission; but when a co-laborer in the prime of life, at the height of his usefulness, is cut down before he has had time to enjoy the full fruition of his labors, we marvel, we are lost in wonder.

Doctor Reed was elected a "member by invitation" March 14, 1894. The preceding meeting, however, he made his first appearance in this Society, having been invited to open the discussion

on Doctor Kinyoun's paper, entitled "The Prevention and Control of Diphtheria." In reverting to this debate, we can recall his modest demeanor, his convincing arguments and his power to hold his audience throughout a lengthy presentation of the subject. He began by saying that his clinical experience, laboratory work in inoculating animals, and bacteriological studies had led him to certain ideas as fixed convictions:

1. The Klebs-Loeffler bacillus is usually characterized by a deposit of false membrane in the throat, and is attended by frequent fatal sequelae. This bacillus he believed to be the cause of true primary diphtheria.

2. That diphtheria is local in the beginning and by the production of virulent toxins tends to become rapidly constitutional. The bacilli themselves have been found in the internal organs of the human subject, as well as in those of animals. So that we cannot any longer say that the bacilli remain local throughout the attack.

3. Diphtheria is not spread by water and food, except by milk and its products, which are infected *in transitu*. He strongly advocated the bacteriological examination in making the diagnosis.

Two months later, in discussing tuberculosis, he dwelt upon these two points: "The possibility of the transference of tuberculosis by vaccination; and the possibility of its transference from mother to child *in utero*."

January 9, 1895, in discussing diphtheria and its treatment by its antitoxin, he said he believed the production of antitoxin should be under municipal control and be tested by disinterested parties so as to avoid imposition by unscrupulous men whose desire is gain. He lived to see the enactment of a law to protect this community from spurious viruses. He had witnessed the wonderful immunizing effects of antitoxin, so advised its use as a preventive as well as a curative agent.

His masterly hand struck the death-blow to the opponents of antitoxin, in the discussion of "The Clinical Aspects of Diphtheria treated by its Antitoxin," December 4, 1895.

A clinician of wide experience and recognized ability, while disclaiming any unfriendliness toward its use, had taken a decided stand against this serum, basing his remarks upon the statistics and arguments of a distinguished English laryngologist and a well-known American pediatricist. It seemed as if the pendulum were swinging toward the opposition when Walter Reed entered the forum—majestic, fearless, determined to conquer. With keen eyes fixed on his principal antagonist, he hurled his weapon of defence in unmistakable language, when he said: "You are theorizing while we are dealing with facts. If another friend of antitoxin arises and deals it such blows as Doctor —

has given it, the antitoxin serum will be slaughtered in the house of its friends."

In concluding his remarks, came this appeal: "I myself almost feel like saying, with the reader of the paper, that the failure to use it in a case of human diphtheria is criminal; and I beg of you, that if you have not yet done so, when you next stand by the bedside of your patient afflicted with this disease, you do not, through any fear of its peculiar action, withhold this invaluable remedy."

It must have been a great satisfaction to him to witness not only the conversion of his opponents, but the universal use of the antitoxin of diphtheria.

His paper entitled "What credence should be given to the statements of those who claim to furnish Vaccine Lymph free from Bacteria?" is worthy of praise. He conducted a series of experiments upon monkeys by vaccinating them with various vaccine matter, and was "convinced that all virus contained bacteria and that bacteria-free lymph did not exist."

It is a singular coincidence that the last appearance of Dr. Reed in this Society was at a memorial meeting, when he eulogized as an author his friend and associate, Dr. W. W. Johnston.

The Medical Society of the District of Columbia is proud of having had the friendship of Walter Reed; we gloried in his achievements, and we now mourn the loss of a courteous, industrious, famous and highly honored member.

Historical Remarks, by MEDICAL DIRECTOR R. A. MARMION,
U. S. Navy.

Mr. President and Members of the Medical Society of the District of Columbia: Walter Reed was born in Gloucester Co., Virginia, on the thirteenth of September, 1851, and was the son of Rev. Lemuel Sutton Reed who was for forty years or more an eminent Methodist minister. In his personal appearance Walter was highly favored even in his youth, and to this there were added a gentleness of disposition and a graciousness of manner which won for him the admiration of all who were brought in contact with him—qualities which we know were characteristic of him ever after. Intellectually he was, as a boy, precocious and devoted to study, so that at the age of fifteen he had acquired a knowledge of Latin and Greek rarely found in one so young. History, literature and philosophy were also favorite studies, and his familiarity with them rendered him the peer of many who were his seniors in age by several years.

By a special dispensation he was matriculated in the Academic Department of the University of Virginia at the age of sixteen. He quickly attained and held, throughout that first year, the highest standing in his classes. Owing, however, to the limited

means of his father, who was maintaining two other sons at the same school, it became evident to Walter that he would not be able to carry out his original plan of completing the Academic course; so, at the beginning of the following year he began the study of medicine, and at the end of one session of nine months he was awarded the degree of Doctor of Medicine, although he was not yet eighteen years of age. This feat he accomplished in spite of the advice of friends who had, in advance, sought to dissuade him from undertaking it. His only reply to such advisers was that "he did not fear the result." In a few months after his graduation at the University of Virginia he went to New York and matriculated at the Bellevue Medical College, and in one session acquired the degree of M. D. Following his graduation at Bellevue he was attached to various hospitals in New York and Brooklyn, conspicuously the Brooklyn City Hospital and the Charity Hospital on Blackwell's Island; at the latter he devoted himself especially to the study of the diseases of women and children. He was also for a while, one of the physicians to the poor of New York City. During his Brooklyn life he had attracted the attention of Dr. Joseph Hutchinson, one of the most prominent medical men of that city, who urged and secured his appointment as one of the five Inspectors of the Board of Health—a position much sought after in those days. This post he was filling most creditably when his twenty-first birthday dawned. Even at this early date, Dr. Reed had acquired a very enviable standing among the medical men of New York and Brooklyn, among whom he was especially well known for his skill as a surgeon. Within a few years, as we have seen, he had been holding various professional positions of responsibility, but he could not help feeling that there was a point beyond which he could not go on the road toward that success which he coveted, without the influence of wealthy friends and of influential social connections on the spot. Thus it was that in 1874 he began to think seriously of entering the Medical Corps of the Army or of the Navy, and, by the spring of 1875, he had chosen the Army as the field for his future labors.

I cannot dismiss this part of my subject without pausing for a moment to weigh certain characteristics of our lamented colleague and, first of all, I would advert to the fact that even in his boyhood years there shone forth so many of the splendid traits which illustrated his after life; he was fired with ambition and sustained by an indomitable energy in his early student days which invariably brought him victory; but his innate tenderness of nature and his exquisite regard for the sensibilities of a disappointed contestant so dominated him at such times that no one ever knew him to boast of his victory. A deference for the opinions of others, too, was always a prominent characteristic; and this we have seen evinced so uniformly in the discussions taking place at

meetings of this Society. And so I might go on analyzing and dwelling upon other traits, but the limited time prevents me.

Turning to the military history of Major Walter Reed, as borne upon the records of the office of the Surgeon General of the Army, we find that he was appointed Assistant Surgeon with the rank of First Lieutenant June 26, 1875; promoted to be Assistant Surgeon with the rank of Captain June 26, 1880; Surgeon with rank of Major December 4, 1893; and at the time of his death was first on the list of Majors in the Medical Department.

He was on duty in the Department of the East from July 23, 1875, to May 21, 1876; in the Department of Arizona from June, 1876, to May, 1880; again in the Department of the East from September, 1880, to November, 1882. From November, 1882, to July, 1887, he was attached to the Department of the Platte, and from August, 1887, to October, 1890, he was on duty at Mt. Vernon Barracks, Alabama. His next assignment was to duty in Baltimore, Md., from October, 1890, to October, 1891, when he was transferred to the Department of Dakota where he remained until August, 1893, when he was ordered to duty in the office of the Surgeon General of the Army. Under this assignment he was Curator of the Army Medical Museum and Member of the Faculty of the Army Medical School for over nine years and up to the date of his death, which occurred in this city November 23, 1902.

In the meantime, too, he served, at several different periods, as Member of the Army Medical Board in this city, was a member of the Cholera Board in July, 1898; was on detached duty making inspections of camps and field hospitals in August, 1898; was Member of the Typhoid Fever Board in August, September and October, 1898; in October, 1898, he was on inspection duty at Natural Bridge, Va., and again in April and May, 1899, at Puerto Principe, Cuba. In March and April, 1900, he was ordered to investigate and report upon the use of electrozone and germicides at Tampa and Havana, and in June and July, 1900, was a member of a Board of Medical Officers at Camp Columbia, Cuba, for the purpose of scientific investigation with reference to infectious diseases prevalent in Cuba, and, from September 27 to October 13, 1900, on similar duty with regard to yellow fever. These various assignments were of great importance from the standpoint of preventive medicine and did much to solidify the foundation on which he was destined to erect the structure "more lasting than brass" which to-day towers above the many works of a life full of labors for the benefit of his fellow man.

It seems to me that I cannot better close this paper than by quoting the language of the official record of Major Reed as drawn from the files of the Surgeon General's office:

"Of Major Reed's work in the Medical Department and his scientific researches, it is probable a complete history can never

be obtained. His eminence as a bacteriologist, and in practical hygiene as applied to military life (as a student of all forms of bacteria) led to his being intrusted with special investigations, which were interrupted by his death, and which, it is now believed, will never be completed. He was regarded by his associates as a man who combined an unusual degree of scientific accuracy with calm judgment which rendered him invaluable in searching out the causes of epidemic diseases and tracing their progress.

"In 1901 he began the investigation of the cause and the prevalence of yellow fever, conducting his investigations at Quemados, near Havana, where he established headquarters and was given every facility for conducting his experiments.

"The conditions in Cuba in 1901 were such as made the investigations of Major Reed and his corps of assistants of special moment. An epidemic of yellow fever existed despite the efforts of the sanitary experts, led by General Wood, who were endeavoring to stamp out the disease. The houses of persons infected were subjected to rigid disinfection. Furniture was destroyed and every possible precaution was taken to prevent the spread of the disease under the old treatment. Major Reed became convinced that proper sanitation was not all that was needed. He believed that some other agency than accumulations of filth was responsible for the spread of the disease, and his attention was attracted to the fact that it took much longer for a house to become infected than the usual time of incubation. This suggested a biting insect as an intermediate host of the parasite, and he asked and promptly received from General Wood permission to make experiments with mosquitoes as the conveyers of yellow fever, and a liberal supply of money for these experiments. It was thus determined beyond question that through a certain species of mosquito the yellow fever germ was disseminated."

In recognition of this precious work the degree of Master of Arts was conferred upon Major Reed by the Harvard University in June, 1902, because, as President Eliot stated when the degree was awarded, Major Reed had demonstrated how to rid the world of yellow fever. About the same time the degree of LL.D. was conferred upon him by the University of Michigan at Ann Arbor, Michigan.

*Major Reed as a Medical Officer, by MAJOR J. R. KEAN, Surgeon,
U. S. Army.*

In speaking of Dr. Reed as a medical officer we should consider especially that part of his career with which the members of this Society are least familiar, namely, from his entrance into the Army in 1875 to his assignment to duty in Washington in 1893. With the latter date began his career as a scientific man, although much of his time during this last decade was given to examining

boards and other work of a military rather than scientific character, and the race horse spent much time at the plough.

These eighteen years of garrison duty were, we may be sure, not wasted, yet the official records tell but little of them. The records show 15 changes of station (with four years in Arizona, five in the Department of the Platte, two in the Department of Dakota, three in the South and three in the East). There are a few brief commendations for professional zeal and devotion to his patients, and that is all.

The work of young Army surgeons claims always little space in the gazettes or in the reports of military commanders, and in the '70's and '80's the life was certainly not stimulating to intellectual effort.

The surgeon shared with his comrades of the line the tedium of long marches and the monotonous sameness of Arizona summers and Dakota winters. And those with whom *bonne camaraderie* outweighed studious industry shared also the afternoons of bottle-pool and beer, and the nightly seductions of draw poker. But for medical officers this life was redeemed by the study of our profession, which was then beginning to broaden out from ancient channels into the full flood of recent progress, and it was saved from triviality by those stern responsibilities of life and death which practice brings to all physicians. To lesser minds the limitations of such a life might have been narrowing, but for the eager industry and professional devotion of a Reed they made the roots strike deep; and when we are surprised at the rapid growth and splendid fruit of his career as a scientist we must remember that in the post surgeon's unmarked life the seed was germinated and the roots were firmly set. But for the opportunities given him by his position in the army, however distinguished he may have become in other ways, it is safe to say that the work with which his fame will always be inseparably connected would never have been accomplished by him. During this long apprenticeship he acquired too that perfect familiarity with the conditions and limitations of army life which, combined with his scientific knowledge and sound judgment, made him the best sanitary inspector in the Army, and the court of last resort on all sanitary questions.

I first learned to know Dr. Reed by reputation when in the spring of '88 I followed him in station at Fort Robinson, a two-battalion post in the northwest corner of Nebraska. I learned much of his devotion to his patients, and their devotion to him was equally in evidence. The country about is thinly settled with families locally known as "Grangers," who were attempting to support themselves by farming in a grazing country where the rainfall was not sufficient for good crops except only about one year in three. The crop of babies, however, never failed, and the Klebs-Loeffler bacillus and the pneumococcus flourished peren-

nially in their wretched cabins. To Reed's tender and generous spirit the call of these poor people never came in vain, and the trail was never so long or the night so dark as to deter him. In the winter these rides were really dangerous and a source of much uneasiness to his family and friends for fear of his being overtaken by one of those blizzards in which the staunchest horse turns tail to the wind and the most experienced frontiersman cannot see his way, and the danger to the lost traveler is greater than that of a battle.

Again we find him at Mount Vernon Barracks in Alabama, according to the official statement of his commanding officer, devoting himself with the same earnestness and patience to the sick of Geronimo's band of Apaches, then held there as prisoners, and to the sick negroes of the surrounding country, as to his own patients in the garrison.

Of the first years of his service which he spent in Arizona I gained some knowledge when in the summer of 1896 he came to Key West, my station at that time, to study the blood of variola—there being an epidemic of smallpox there at that time. All day he would sit over his microscope, but the evenings we spent on the coolest corner of the porch looking out at the quiet tropical sea, while he told reminiscences, suggested it may be by the heat, of his service at Fort Yuma and Camp Apache. These stories were full of that humor which was so characteristic and so pleasing a trait of his daily conversation, and some of these were models of the short story. The history of Sally Ann, a Gila monster (named after the two ladies of the post most conspicuous in church work), which the Chaplain captured in his kitchen, and undertook to tame, would have made a perfect magazine article just as Reed told it. His account of his summer at Yuma, the hottest of army posts, where the daily July maximum was from 112° to 115°, still brings back a clear cut picture to my memory, and I can see him with his messmate, a captain of infantry, who weighed 250 pounds, and the soldier—or in army parlance “striker”—who filled the dual rôle of *chef* and butler. The captain, a veritable Porthos, sat down to dinner in two garments, with a fan, a towel to wipe his face, and near at hand a pitcher of the largest size full of water from the olla—for there was no ice. Before him was a large roast of range beef which, after helping Reed, he would consume entirely and likewise empty the water pitcher.

On one occasion Reed took a leave, and in company with another officer and a lady of the garrison going home, drove in an ambulance 150 miles to the railroad. The other officer was charged with the commission of laying in the food for this trip of nearly a week. After they started they found that the provision consisted simply of crackers and sardines. Reed up to that time had never been able to eat sardines, but he learned on this trip. He had his share also of Indian campaigning, and on one occasion

brought into the post a little Indian girl of four or five, who had been so horribly burned that her people had abandoned her to die. This child he succeeded in saving and brought her up in his family as a nurse for his children in spite of the warning of that keen old Indian fighter General Crook. When she was grown, the savage Apache blood asserted itself and she ran away, after giving evidence that fifteen years of gentleness and refinement had not modified the cruel and deceitful character of her race.

Memory often holds most fast to trivial things, but they are usually characteristic. So, though what has come into my mind to tell you of our dead friend is not of weighty matters, yet they show the odd vicissitudes of army life and show him as he was—the pleasant comrade, the eager student and the devoted doctor, gentle, unselfish, modest and brave, as the gentle and devoted ever are. Over this earnest spirit and the high purposes of his life played always a merry and kindly humor like the dancing lights and reflections from the surface of a deep, swift river. It was often keen, but never bitter, and was his most striking social characteristic, as was devotion to the duty which was before him the dominant feature of his professional life. For him, as for the great Duke—

The path of duty was the way to glory.
He that walks it only thirsting
For the truth, and learns to deaden
Love of self, before his journey closes,
He shall find the stubborn thistle bursting
Into glossy purples which outred
All voluptuous garden roses.
He that ever follows her commands
On with toil of heart and knees and hands
Through the long gorge to the far light has won
His path upward and prevailed,
Shall find the toppling crags of Duty scaled
Are close upon the shining table-lands
To which our God Himself is moon and sun,
Such was he—his work is done.

Dr. Walter Reed as a Teacher, by A. F. A. KING, A. M., M. D.

At the time of the organization of the U. S. Army Medical School, in 1893, Doctor Reed was appointed Professor of Bacteriology and Clinical Microscopy, and he continued to fill this position and to perform its duties most acceptably until the time of his decease, in November, 1902.

Two years after beginning his work in the Army Medical School he was elected Professor of Pathology and Bacteriology in the Medical School of the Columbian University in this city, and he continued to hold this position also until the end of his life.

If we endeavor to ascertain in a general way what are the requirements necessary for any one to become a really skilled and successful instructor in any department of knowledge, and then

ask ourselves how far Professor Reed possessed these qualifications, it will at once be seen that the particular attributes necessary were preëminently his own.

To teach well one must know well the subject to be taught, and conversely he who cannot explain a thing clearly to somebody else does not usually know it well himself.

In the whole domain of medical science there is probably no subject more difficult and intricate than that of pathology, especially when considered in relation with bacteriology, this latter being also a comparatively new departure, and therefore bristling with the unfamiliar terms of a new and labored nomenclature, as every new science necessarily must be.

Notwithstanding these difficulties, Professor Reed, with his well-trained mind and cultivated powers of observation, inspired too with the spirit of research and led on by the charm of discovering new principles and new facts, had devoted himself with so much ardor, earnestness and industry to the study of his chosen sphere of thought that it may be said, all difficulties had been trampled under his feet; that he rose, step by step, to higher and still higher planes of knowledge, until reaching an eminence where the whole subject became easily intelligible in one comprehensive view and where he himself attained a complete mastery of his favorite theme.

Having traversed the highways of knowledge himself he was fully able to lead his pupils along the same paths and perhaps point out to them many shortcuts which were easier than the longer distances and more laborious journeys originally pursued by himself. It should be remembered also that many of these roads were not always the well-traveled avenues of old lines of thought, but on the contrary, entirely new, strange and perhaps lonely ways, far out in the prairies of investigation, where briars of speculation, weeds of error and the *ignes fatui* of false theories were liable to obstruct and mislead the honest seeker for truth. It was under these circumstances that Professor Reed became a trusted guide and counselor. In these trackless wastes of thought he could not easily get lost or take a wrong direction, for in many instances he was able to say: "*I made these paths myself*," and he well knew whither they would lead.

The successful teacher, however, must not only possess the requisite knowledge and be able to guide his pupils in the best way, and hold out to them the easiest method of obtaining the information for which they are in search, but he should also have the faculty of presenting the subject in such a manner as to hold their undivided interest and attention by pointing out the *attractive features* and *pleasing aspects* of the subject under discussion. Dreary indeed would be the road to learning, were it always through thorns, thistles and briars, with no flowers to charm, and no vistas in the forest through which we might at times obtain a

glimpse of pleasant scenes—of sunshine and beauty. Dreary, and dull too, will be the teacher who continues his endless monotony of tiresome propositions, with no touch of humor and no sparkle of wit to vary the irksomeness of continued effort, and awaken the flagging power of a strained attention by the pleasant diversion of an occasional happy thought.

In this particular again Dr. Reed was singularly fortunate. One of his latest admiring pupils writes me that "his lectures, besides satisfying the zealous seeker for knowledge, were spiced with humor which was most refreshing, and which made the relation between himself and his students a freer and more sympathetic one." (Donnally.)

Indeed, in whatever aspect we review Dr. Reed's work as a teacher, and however critically we single out the several qualifications required for the best and most successful execution of the teaching art, we find Professor Reed happily endowed in a more than usual degree with these special gifts and qualifications, and which he knew full well how to utilize to the best advantage.

During the later years of Professor Reed's work in the Medical School of the Columbian University, he was assisted by Dr. James Carroll of the U. S. Army, who also accompanied Dr. Reed to Havana and again assisted him in their well-known experiments with mosquitoes and yellow fever. No one perhaps was better acquainted with Dr. Reed's methods of teaching than Dr. Carroll who kindly writes me as follows :

"Dr. Walter Reed was respected and beloved by all his pupils. Always kind and courteous, earnest and enthusiastic, he imbued them with the same spirit, and invariably commanded their respect and attention. A thorough master of his subject and of the English language, he treated the driest and most difficult topics in such a manner as to render them lucid and interesting. His marvelous accuracy and clear conception of every detail, his charming personality and polished manner, made him an ideal professor, of whom his students were both fond and proud. Of nervous temperament he was quick to note and resent the slightest laxity and inattention ; and when it became necessary to administer a rebuke it was implied rather than given directly, his delicacy of feeling prompting him to soften the blow by a subtle flash of wit that convulsed the class and diverted attention from the culprit. The lesson was never forgotten by him for whom it was intended, and it was never necessary to repeat it, for the moral effect of the slightest manifestation of his displeasure was far greater than could have been the dread of any other method of reproof. So closely was he in sympathy with his class and so securely had he engrafted himself upon their affections that their inquiries during his illness and manifestations of grief upon his demise indicated the loss of a dear friend, guide and counselor, rather than a teacher of cold scientific facts."

Another pupil—Captain J. Hamilton Stone, Assistant Surgeon, U. S. A.—writes me as follows: “As a teacher, Dr. Reed always seemed to me to be, first of all, *master of his theme*. His information was so much his own—a part of him, as it were—that when it was given to others it flowed forth with unadulterated naturalness, and sparkled with a keen interest which his charming personality could not help but lend it. These qualities would not permit his words to fall upon deaf ears. His kindly and considerate mien, together with his universally acknowledged high scientific attainments, won for him both the respect and admiration of his students. His language was always interesting, eloquent and well appointed. When at his best his voice would reach a high falsetto note, and this was his characteristic method of impressing important facts upon dull or indurate intellects. His students never feared him, but from the start regarded him with filial affection. Of patience, that special attribute of a good teacher, he possessed an abundance. He was constantly at the side of his pupil in the laboratory, advising, consoling, encouraging, and, above all, instructing.”

A student of the Columbian University, Mr. H. H. Donnally, remarks that “Dr. Reed’s lectures were models of order and system. A recital of the various views previously held in the different branches of pathology and bacteriology always led up to and served to emphasize the more recent and generally accepted theories. In these historic reviews the student was constantly surprised at Dr. Reed’s remarkable memory for dates and his familiarity with the host of investigators and their several special lines of research, not only those in this country, but others in all parts of the civilized world. This method of unfolding the subject historically, with a final and forcible exposition of the latest current views, was keenly appreciated by the students and gave them a broad and comprehensive picture of the whole subject, which was easily remembered and understood.”

Finally, I must express my great regret that it has seldom fallen to my lot to hear Dr. Reed lecture, and I have never witnessed his demonstrations in the laboratory; hence I have supplemented my own remarks by quoting from others who had happily been more favored in these respects, and certainly no statements of mine could more appropriately represent the work of Professor Reed as a teacher than these eloquent expressions from his own faithful and loving pupils.

*Dr. Walter Reed as an Author, by CH. WARDELL STILES, PH. D.,
Zoölogist, U. S. Public Health and Marine Hospital Service.*

Zoölogy was once facetiously defined as “The study of the useless”. This definition will doubtless appeal to many people as quite applicable; for to persons not in scientific work the prac-

tical application of long, detailed and often tedious accounts of animals is not always evident. In defending such work, many men quote the time-honored expression "Knowledge for knowledge's sake". But seeing little difference in principle between this expression and the phrase "Money for money's sake", and not wishing to pose as a defender of the intellectual miser, I take great pleasure as a professional zoölogist in acknowledging the debt which zoölogy owes to the medical profession for the practical application of zoölogic knowledge to the benefit of mankind.

Zoölogists have shown how important the insects are from an economic standpoint in making or destroying certain foods upon which we directly or indirectly depend for life. But it is chiefly to the medical profession that this world is indebted for the application of entomologic knowledge in connection with the transmission of the important infectious diseases, hence in connection with saving life.

Dr. Walter Reed, in whose memory we meet here this evening, stands out among medical authors as one who has been particularly prominent in this field of work, and though he was not a zoölogist by training, his writings in applied zoölogy in connection with yellow fever entitle him to rank as among the greatest of applied zoölogists.

It was the U. S. Bureau of Animal Industry which first clearly demonstrated the great importance of arthropods as intermediate hosts of epidemic diseases, and its reports on the tick (*Boophilus*) as a transmitter of Texas fever of cattle will always remain classic. Then the writings of two English physicians, Ross and Manson, and of an Italian zoölogist, Grassi, carried the subject further in connection with mosquitoes and malaria.

Finally, the writings of our friend, Walter Reed, and of his associates demonstrated to us the relation of mosquitoes and yellow fever, and showed us how we could protect both life and commerce from this scourge.

It is interesting to note that all three of these discoveries in applied zoölogy show certain parallels. All deal with diseases which are preëminently tropical or subtropical; all deal with diseases of unusual economic importance; and the actual positive experimental work upon transmission has been done chiefly by English-speaking investigators.

Might I add here, without misinterpretation, that the Texas fever work was done before the days of the Noble prize. The first medical awards of this prize of \$40,000 were to Behring in recognition of his work for mankind in connection with diphtheria, and to Pawlow for his work in physiology; the next award was to Ross in recognition of his work for humanity in connection with malaria. Are not Reed, Carroll, Lazear and Agramonte the natural candidates for the next award because of their work for mankind in connection with yellow fever, and in case the con-

ditions of the grant permit it, should not each of the widows of two of these men receive the share which would have gone to her husband?

Our friend, Dr. Reed, was not what would be called a prolific writer. His numerous routine duties prevented him from furnishing the manuscript which we had a right to expect from a man of his ability. Still, beside short remarks in society discussions, his bibliography contains 27 original articles all printed between 1892 and 1902. Ten of these articles dealt with yellow fever, three or four with typhoid, two each with malaria and erysipelas, and one each with cholera, pneumonia, trikresol, vaccine, artificial immunity against vaccination, amoeboid bodies in the blood of vaccinated monkeys and children and in variola, formaldehyde, splenic leukemia, and electrozone. All were in English and although they were all official Government work, it is a striking fact that only five, so far as I have been able to find, were published by the Government.

Regarding the general style of the articles, there are three points in particular which are striking: First, the attention given to details immediately reminds us of the writings of Dr. Theobald Smith of Harvard University; second, the directness of diction immediately reminds us of Dr. J. McKeen Cattell, Professor of Experimental Psychology, Columbia University. In fact one of the characteristics for which Dr. Reed was noted among his friends was the absolute straight line of his thoughts and the orderly, lucid and logical development of his subject. Third, Dr. Reed was of a judicial temperament, and the judicial manner in which he handled his subject, even in controversy, forcibly reminds us of the same prominent characteristic in Professor William H. Welch of Johns Hopkins University.

In forecasting the time of the influence of Dr. Reed's writings, it is clear that his articles on yellow fever will far outlive his papers on other subjects. His other writings will be known to men only in certain lines of medical work, but his papers on yellow fever will be known directly or indirectly to both physicians and zoölogists, and to both professional men and business men. They will be quoted for decades to come, both by government officials and by private practitioners, and they will be one of the most important factors in determining the future policy of civilized nations in dealing with yellow fever, a disease which we dreaded only a few years ago, but now one which, thanks to the work of Reed and his colleagues, will soon be little more than a medical curiosity.

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Dr. Reed's Work in Cuba, by MAJOR GENERAL LEONARD WOOD,
U. S. Army.

[Abstract.]

The work of Dr. Walter Reed is the most important work in the way of medical research and discovery which has been accomplished by any one who has lived in this hemisphere. There is no other medical discovery to which it can be compared, unless it be that of anaesthesia. The results to humanity are incalculable and far-reaching. It is safe to say that this discovery has resulted in saving each year more lives than were lost in the war with Spain, and in a saving to commerce, and especially to the southern portion of our country, of an amount equal to the cost of the war with Spain.

The following letters and telegrams were received :

WASHINGTON, D. C., Dec. 29, 1902.

Dr. S. S. ADAMS, Pres. District Medical Society.

My dear Dr. Adams: I regret exceedingly that an engagement made some time since, and from which I cannot excuse myself, will prevent me from attending the Reed memorial meeting on Wednesday evening.

No one appreciates more deeply than I do the loss to scientific medicine and to the medical corps of the army caused by Major Reed's death. His scientific work was eminently fruitful and far-reaching in its results. As the head of the medical corps during nine years of his most useful work, which was prosecuted under my general direction, I am of course entirely familiar with the results accomplished.

Major Reed was endowed by nature and by training with the essential qualifications for engaging in research work in the special field to which he devoted his talents and his energies. Conservative, painstaking, thorough, persevering and ready in resources, he acquitted himself with credit in every task assigned to him, and has achieved great and deserved distinction by his successful demonstration of the method by which yellow fever is transmitted from man to man. In addition to this, he was a modest and courteous gentleman, who attracted all of those who came in contact with him. His death came to me, as to his other numerous friends, as a great personal grief and irreparable loss.

Very truly yours,

GEO. M. STERNBERG.

BALTIMORE, *Dec. 30, 1902.*

DEAR DR. ADAMS: I have to leave unexpectedly today for Canada. Please express my regrets that I cannot be at the memorial meeting to Reed.

With kind regards, sincerely yours,

WM. OSLER.

RICHMOND, VA., *Dec. 31, 1902.*

Maj. J. R. KEAN, Surgeon General's Office,

War Department, Washington, D. C. :

Greatly regret I cannot attend the meeting tonight in honor of Dr. Reed, whose friendship I prized, whose character I admired and whose contribution to science and country cannot be measured.

FITZHUGH LEE.

TREASURY DEPARTMENT,

PUBLIC HEALTH AND MARINE HOSPITAL SERVICE,

WASHINGTON, D. C., *Jan. 5, 1903.*

DR. F. S. NASH, 1723 Q Street, Washington, D. C.

My dear Dr. Nash: As you may know by this time, I have been absent from the city for a month and returned Saturday. On opening my mail today, I find your note of December 9, and I wish to express my great regret that I could not have been here to accept the honor which was conferred upon me of responding at a meeting held in memory of Dr. Reed. It would have been a great privilege to have taken part in that meeting, and of all the things which I have missed by being away one month I regret this more than any other.

I had, during his life, the highest regard for Dr. Reed as a scientist, and, more than that, I had the warmest feeling of friend-

ship toward him, although we were by no means intimate, and certainly his death was a blow to science and the whole governmental service.

I had a conviction that in the near future the service of which I have charge would find a way of having some official connection with Dr. Reed in his great work, and that through him the bond of union between the medical services of the Government would be materially strengthened.

I have learned that Dr. Stiles took the place which was intended for myself, and I am much gratified that he did.

Very sincerely yours,

WALTER WYMAN.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, November 19, 1902.—The President, Dr. S. S. Adams, in the Chair. Over 82 members present.

Drs. Carl A. R. Darnall, U. S. A., and Geo. A. Lung, U. S. N., were elected members by invitation.

Dr. Magruder, for the executive committee, read the following report :

November 19, 1902.

“The executive committee desires to report that the following legislation endorsed by the Society has been recently enacted :

“First, legislation authorizing the appointment of guardians for the property of persons addicted to the use of opium, cocaine, etc. Second, legislation regulating the production and sale of viruses, serums, etc. Third, legislation for the promotion of anatomical science.

“The chairman of the committee has been informed by the Surgeon General of the Public Health and Marine-Hospital Service that he has appointed a committee to draft such regulations as are necessary to make the law regulating the production and sale of viruses, serums, etc., operative, and that these regulations when drafted will be submitted to the commission consisting of the Surgeon Generals of the Army, Navy and Public Health and Marine-Hospital Service for action.

“The executive committee has received from the President of the Society six essays entered in competition for the prize offered by the Society, and has selected a committee for their examination. It is expected that the result of this examination will be announced at the meeting of the Society held on the 17th *prox.*”

Upon motion of Dr. Kober, the following resolution was unanimously adopted by the Society :

WHEREAS, The members of the Medical Society of the District of Columbia have learned with profound regret of Dr. Walter Reed's illness;

Resolved, That the Secretary be requested to express to him the love and esteem in which he is held by the members, united with the fervent hope for his speedy recovery.

The following cases and specimens were presented :

By Dr. J. Ford Thompson : 1. "Gangrene of the Scrotum in an Infant 1 month old." Discussed by Drs. T. C. Smith, Jas. Stuart and S. S. Adams. See page 451. 2. "Talipes." Discussed by Dr. Shands.

Dr. Borden, by request, related the history of Dr. Walter Reed's illness from appendicitis. Discussed by Drs. Neff and Bovée. See page 425.

Dr. D. S. Lamb presented a specimen : "Monstrous Foetus : Omphalopagus." See page 427.

Dr. Hickling presented a case and specimen : "Softening of the Brain." Discussed by Drs. A. B. Richardson, D. S. Lamb, Kober and Castelli. See page 421.

Dr. Bovée presented a specimen of "Marked Elongation of the Cervix Uteri." Discussed by Dr. J. Taber Johnson. See page 431.

The discussion of Dr. Cook's essay on "The Treatment of Typhoid Fever," was continued by Drs. Sprigg, Vaughan, Ruffin, Vincent and Neff. See page 401.

Wednesday, November 26, 1902.—The President, Dr. S. S. Adams, in the Chair. Over 74 members present.

A letter was read from Major J. R. Kean, Surgeon, U. S. A., informing the Society of the death of Major Walter Reed, Surgeon, U. S. A., and requesting the members to be present at the funeral services at St. Thomas Episcopal Church, at 2 P. M. Tuesday, November 25.

The following were appointed a committee on the death of Dr. Reed : Drs. Kober, Shute and Nash.

Dr. Hasbrouck suggested that Dr. Lorenz, who was then in Chicago but was about to visit Washington, for a few days, be invited to give a clinical demonstration, and moved that the standing committee be requested to communicate with Dr. Lorenz on the subject. Carried.

The following cases and specimens were presented :

Dr. Banister presented a man having a Transposition of the Heart. Discussed by Drs. Acker, Shute, Claytor and Behrend. See p. 427.

Dr. Chadwick presented a case and specimen : "Exencephalus and Spina Bifida." Discussed by Drs. D. S. Lamb, Shute, A. F. A. King and Keech. See p. 428.

A revised list of the Members by Invitation was presented by Dr. Nash and referred to the Board of Censors.

The discussion of Dr. Cook's essay on the "Treatment of Typhoid Fever" was concluded by Drs. Bovée, Acker, McCormick,

Claytor, Woodward, Keech, Chappell, Mary A. Parsons, D. Olin Leech, Frank Hagner, I. S. Stone, Barnes, Wm. Ward, Banister and Motter.

Wednesday, December 3, 1902.—The President, Dr. S. S. Adams, in the Chair. Over 78 members present.

The Treasurer's report for November showed receipts, \$226; disbursements, \$36.64.

Dr. Kober read the memorial prepared by the committee appointed to take action on the death of Dr. Reed. See p. 458.

The committee recommended, on account of Dr. Reed's distinguished achievements and as a further evidence of respect, that a special memorial meeting be held December 29, with the following program :

Introductory remarks by the President of the Society, Dr. S. S. Adams.

Biographical sketch, Dr. Ross, U. S. Navy.

Dr. Reed as a Medical Officer, Dr. J. R. Kean, U. S. Army.

Dr. Reed as a Teacher, Dr. A. F. A. King.

Dr. Reed as an Author, Dr. Wyman of the Public Health and Marine-Hospital Service.

Dr. Reed's work in Cuba, General Leonard Wood.

Dr. Reed as a Scientist and Benefactor to Humanity, Dr. Wm. H. Welch.

The report and recommendation were accepted, and the Chair requested the memorial committee to make the necessary arrangements for the special meeting.

The President announced a reception by the Society to Dr. Adolph Lorenz on the evening of December 4, and also that the Doctor would have a clinic at Providence Hospital.

Dr. T. C. Smith presented a specimen consisting of a portion of umbilical cord having at one point an unusual enlargement about the size of a hen's egg.

Dr. Castelli read the paper of the evening: "Appendicitis from a Physician's Standpoint." Discussed by Drs. Wm. Ward, A. F. A. King, Balloch, Mayfield, I. S. Stone, Reyburn, Frank Hagner, Neff, J. Dudley Morgan, R. S. Lamb, Keech and J. Ford Thompson. See p. 433.

Wednesday, December 10, 1902.—The President, Dr. S. S. Adams, in the Chair. Over 40 members present.

Dr. Cook, for the Board of Censors, reported favorably on the applications of the following candidates for membership by invitation, and they were elected: Drs. Walter D. McCaw, Jefferson R. Kean, M. W. Ireland, Calvin DeWitt, John H. Stone, Henry A. Shaw, Albert E. Truby, J. R. Church, Frederick A. Dale, James D. Glennan and James S. Wilson, U. S. Army; F. M.

Bogan, N. M. Ferebee and E. R. Stitt, U. S. Navy; and Dr. John W. Ross, U. S. Navy, retired.

The Editorial Committee reported that another number of the ANNALS had been issued, and asked for an appropriation of \$63.28 to meet expenses connected therewith. The appropriation was made. An appropriation of \$277.56 was also made to the Treasurer for expenses incurred; and \$50.00 to pay for entertaining Dr. Lorenz while in Washington.

The following cases and specimens were presented:

By Dr. D. S. Lamb: "Hemorrhage into the Brain." Discussed by Drs. J. Ford Thompson, J. Dudley Morgan and Chappell. See p. 432.

By Dr. F. R. Hagner: "Carcinoma of the Bladder." Discussed by Drs. E. F. King and Vale. See p. 453.

Dr. Fry read the essay for the month: "Clinical Notes on some Interesting Cases." Discussed by Drs. J. Ford Thompson and A. F. A. King. See p. 446.

Wednesday, December 17, 1902.—The President, Dr. S. S. Adams, in the Chair. Over 95 members present.

The Chair announced the essayists for 1903 as follows: January, Dr. Staveley; alternate, Dr. Van Rensselaer; February, Dr. Reyburn; Dr. Barnes, alternate; March, Dr. Bovée; April, Dr. W. L. Robins; May, Dr. Heiberger; June, Dr. Wall; October, Dr. Hasbrouck; November, Dr. Nichols; Dr. Barton, alternate; December, Dr. Grasty.

Dr. Chappell, Vice-President, took the Chair, and the President delivered the annual address.

At the close of the address, the envelopes containing the names of the successful competitors in the prize essay contest were opened. The prize, \$250, was awarded to Dr. F. P. Vale; subject "Shock."

The essay of Dr. J. B. Nichols, "A Study of Acute Leukemia and of the Etiology of Leukemia," received honorable mention.

A vote of thanks was extended to the judges, Drs. Marmion, Borden and Geddings.

The matter of the reading and publication of the prize essay was referred to the executive committee for report at the stated meeting in January.

The Society adjourned *sine die* for the second session of 1902.

Special meeting in memory of Dr. Walter Reed, December 31, 1902.—The President, Dr. S. S. Adams, in the Chair. Over 62 members and many visitors present.

After an opening address by the President, the following addresses were delivered:

"Historical Remarks upon Major Walter Reed, Medical Dep't, U. S. Army," by Medical Director R. A. Marmion, U. S. Navy.

"Dr. Reed as a Medical Officer," by Major J. R. Kean, Surgeon U. S. Army.

"Dr. Walter Reed as a Teacher," by Dr. A. F. A. King.

"Dr. Walter Reed as an Author," by Dr. Charles W. Stiles.

"Dr. Reed's Work in Cuba," by Gen. Leonard Wood, U. S. Army.

"Dr. Reed as an Investigator and Benefactor of Mankind," by Dr. Wm. Welch, of Baltimore.

The President read communications from Dr. Wm. Osler, Surgeon General Sternberg and General Fitzhugh Lee, regretting their inability to attend, and thanked the speakers on behalf of the Society.

Medical Miscellany.

Urinary Stricture in Fishes.—U. S. Fish Commission.—Two cases of stricture of the urinary orifice in brook trout were observed in October among domesticated fish. A decided retention of urine had resulted, a large sharply-defined tumor in the caudal portion of the abdomen marking the outlines of the greatly distended bladder, which could be evacuated by gentle pressure. The larger specimen, a nearly ripe male, seven inches long, yielded ten cc. of a clear, uncolored, slightly alkaline and almost odorless urine. Dissection failed to reveal any mechanical obstruction other than the sphincter muscle, and the cause of the condition is unexplained. The affection is only occasional and has not been known to result fatally.

M. C. MARSH.

The new Columbian University Hospital will be opened in February. The lecture rooms and laboratories of the new college buildings have been in use for some time and are very satisfactory both to students and professors. The hospital has a number of rooms *en suite* with private bath.

E. A. DE SCHWEINITZ.

Woman's Clinic.—At the annual meeting of the Board of Directors in November, the following persons were elected for the ensuing year: President of the Board, Mrs. Emily L. Ragan; First Vice-President, Dr. Robert Reyburn; Second Vice-President, Mrs. W. E. Burleigh; Treasurer, Mrs. M. F. Case; Secretary, Miss Elizabeth Clark; Dr. Julia E. Smith, Miss Lucy Arrick, Dr. Kate E. Lozier, Miss Minnie Heiberger, Mrs. R. L. Quigley. Clinic Staff: Drs. Ida J. Heiberger, Adeline E. Portman, Phoebe R. Norris, Ada R. Thomas, M. L. Strobel, A. Frances Foye, E. L. Maddren. Consulting Staff: Drs. J. H. Bryan, H. L. E. Johnson, H. C. Yarrow, E. A. Balloch, S. M. Burnett, Mary Parsons, Jas. F. Scott, Geo. N. Perry, Rob't Reyburn. Honorary Consulting Staff: Drs. J. E. Brackett, J. Ford Thompson, Mary B. Spackman, W. H. Hawkes, D. S. Lamb.

ELIZABETH CLARK.

Columbian Medical Society.—The graduates of the Medical Department, Columbian University, have organized a society to which the Alumni are eligible who matriculated in 1894-5-6-7. The society is called The Columbian Medical Society and its sessions are held monthly at the homes of the members. The officers for the first year are Dr. Thomas A. Groover, President; Dr. C. S. White, Vice-President, and Dr. G. K. Baier, Secretary-Treasurer.

T. C. DOWLING.

Episcopal Eye, Ear and Throat Hospital.—REPORT OF THE ATTENDING MEDICAL STAFF TO THE BOARD OF GOVERNORS FOR THE YEAR 1902.—During this period 14,215 visits were made to the hospital by 3,050 patients of 20 different religious denominations, and of which Baptists constituted the largest number; 333 patients were admitted for hospital care or operations, and spent an aggregate of 4,057 days in the hospital; 137 were free patients and 196 pay patients; this includes not only those in the private rooms, but many in the wards, who paid what they could.

Operations performed, 721, an increase of 246 over the previous year. This is especially gratifying to the staff as testifying to the character of the work of the hospital and its appreciation by the public. Of the operations, 313 were on the eye, 115 on the ear, and 293 on the throat and nose; 65 cataracts were operated on; they were uniformly successful and included the *extraction* of the lens in several cases of children only 4 or 5 years of age (blind from birth) instead of the old and slow *needling* method. One lens was removed for extreme near-sightedness; 28 cases of crossed eyes were operated on, and artificial pupil made in 26 cases; 14 lost eyes were removed. In one case of maglignant growth, the eyeball and lids had to be removed to save the life of the patient; 18 operations were performed on the mastoid bone for a dangerous condition, in all cases following a "running ear." In one case an abscess had formed in the the brain; the skull was opened and life saved. Enlarged tonsils removed 98, and 60 cases of adenoids were operated on.

Since the opening of the hospital, less than six years ago, there have been 51,941 visits to the hospital by 11,076 patients, and 2,072 operations have been performed.

The finance committee has been directed to confer with the architect, Mr. Wm. M. Poindexter, and issue specifications for bids for the construction of the new hospital which will be begun in March, on 15th street near M, N. W. It will cost about \$75,000 and accommodate 60 patients. E. OLIVER BELT.

Providence Hospital.—During the months of November and December the number of *typhoid fever cases* treated in the hospital was almost double that for the same period in 1900 and 1901, but the fever cases have now diminished very rapidly and have gone back to the normal for the winter. With the completion of the new hospital building and its occupancy in the spring, there will be required for hospital duty a corps of eighty trained nurses, exclusive of the Sisters of Charity in charge of the several departments, nearly double the number of nurses now required. The course of instruction in the Training School now covers a period of three years, embracing theoretical and practical instruction in all branches of medicine. Two lectures a week are given for a

period of eight months during the year. Recitations are required from the pupils in the school on the subject matter of the lectures and on their practical hospital work. The students are divided into three classes, primary, intermediate and senior, and at the end of each scholastic year examinations are held—both written and oral—and class standing determined thereby; and the marks, added to the general adaptability of the pupils as shown by their practical work in the hospital, determine their general standing. The subjects lectured upon in the didactic course in the school embrace medicine, surgery, obstetrics, gynecology, the eye, throat, nose, anatomy, physiology, materia medica and preventive medicine.

T. N. VINCENT.

Contusion of Kidney.—Freedmen's Hospital.—The rule in cases of contusion of kidney is not to interfere so long as there is no progressive hematuria or evidence of sepsis. The following case however shows that this rule is not always to the advantage of the patient.

John W., colored, was admitted October 13, 1901; October 8th he had fallen from a porch ten feet high, landing on his back on a pile of bricks. After lying a short time he was able to crawl into the house, but was obliged to take to his bed on account of pain. The first urine passed after the fall contained blood and the pain and hematuria had continued ever since. Pulse 84; temp. 100.5. A large doughy mass was found in the right side of the abdomen, extending from the liver to the pelvis. This side of the abdomen, as far as the median line, was distended and dull on percussion. The urine contained ten per cent. by volume of fresh blood. The diagnosis of laceration of the kidney was made, but as the pulse and temperature continued to fall and the hematuria lessened from day to day under the use of gallic acid, it was deemed advisable to keep the case under observation. The notes of the 18th show that the pulse and temperature were normal and that the mass in the loin had shrunk considerably, the outlines of the dulness from day to day having been traced with an aniline pencil. There was only a trace of blood in the urine. He steadily improved and was discharged November 6, 1901, apparently well.

He was again admitted to the hospital January 17, 1903; had been apparently in perfect health since leaving the hospital until December 20, 1902, as well as he could fix the date, when he had acute pain in the right side, but kept on his feet until the 27th. Had had fever and sweats. The urine had contained a milky fluid at times since the pain came on. Examination showed that he was suffering from the absorption of septic products, as he was emaciated, eyes glassy, pulse 100 and weak, temperature 102. Had a chill the evening of admission, followed by sweating. The entire right side was distended by fluid, the distension also affect-

ing the loin. Urine loaded with pus. With the history of his first stay in the hospital as an aid, the diagnosis of pyonephrosis was made. January 19 the usual incision was made in the loin and 136 ounces of pus were evacuated from an immense hydronephrotic sac. The hand passed into the sac, detected some remnants of kidney structure at the upper end. There was, however, no odor of urine about the pus and it is not believed that any true kidney structure remained. The sac was washed out and drained and the patient is rapidly progressing toward recovery. The pulse and temperature dropped to normal within a few hours and the chills and sweating ceased.

The case presents several interesting features. What was the source of the infection? There was no history of gonorrhoea between the two attacks, and during his first stay in the hospital, instrumentation of any kind was carefully refrained from on account of the danger of infection. He had had no illness of any kind and had been to all appearances well, having been at work all the time. A specimen of the pus was sent to the bacteriologic laboratory, but the report has not yet been received.

When did the infection begin? One can scarcely believe that this enormous accumulation of pus could have formed in three weeks, but apparently such was the case. Even then it did not force him to seek his bed for a week later. In seeking an explanation of this case it has seemed to me that the blood clot which formed after the accident in 1901 was never entirely absorbed, and that it became infected from contact with urine which reached it from the lacerated kidney. This hypothesis assumes that the laceration in the kidney healed in such a way as to leave a fistulous connection between the kidney and the hematoma.

The course pursued after the injury of 1901 was apparently the conservative and safe one, yet it is evident now that the truly conservative plan would have been to make an exploration of the kidney at that time.

EDWARD A. BALLOCH.

The Medico-Legal Society of the District of Columbia was organized on the evening of December 8, 1902. Drs. Reyburn, Hughes, Dufour, Emmons, Nevitt, Beall, Robinson, and Messrs. Shipp, Forrest, Weeks and others were present. The following officers were elected: President, Dr. Reyburn; Vice-President, Dr. Hughes; Secretary, Dr. Emmons; Treasurer, Dr. C. B. Robinson. Mr. Edwin Forrest was elected Attorney and was instructed by the Society to take the necessary measures to incorporate. The object of the organization is to discuss and secure such legislation of medico-legal character as will be of benefit generally to the citizens of the District of Columbia. The second meeting was held January 12. After the regular business Dr. Dufour read a paper on "Insanity, from a Medical Standpoint," which was discussed by Drs. Reyburn, Hughes, Emmons, Mr.

Weeks and others, and will be again discussed *seriatum* at the next meeting (the second Monday in February) from a medico-legal view. The opening discussion will be on the commitment of the insane, and whether better laws can be enacted on this subject than exist at present.

C. R. DUFOUR.

Health Department, November and December, 1902.—Typhoid fever, consumption, diseases of the circulatory organs and of the nervous system were among the principal causes of death. Of typhoid fever 159 cases were reported in November and 129 in December, and 39 deaths. The reporting of cases of typhoid fever began February 26, 1902, hence no comparison with the preceding year as to cases can be made. Mortality from consumption 110, in the previous year 116; 53 white and 57 colored; 61 males, 49 females. From diseases of the circulatory organs, mainly of the mitral valve, 78 deaths occurred in 1901 and 68 in 1902, a decrease of 12.8 per cent. Deaths from diseases of the nervous system in November and December 1901 were 88 and in 1902—109. The principal of these were cases of cerebral hemorrhage, 41 in 1902 and 42 in 1901.

A general review of the health conditions prevalent during the last two months of 1902 shows about an average mortality. The freedom from sudden and violent changes of weather has been attended with a lessened fatality in lung and kidney maladies. The temperature reached a maximum of 76 in November and a minimum of 16 in December, the mean for the two months being 42.9. The wind averaged 7 miles per hour, and the meteorological conditions for the months were those of fair autumn weather.

The investigation of cases of typhoid fever has been continued and during the two months, records of 270 of the 288 cases reported have been obtained. As a result of these investigations there appears no reason to change our opinion formerly expressed that the Potomac water supply is the source of the infection. Potomac water was used in 75.5 per cent. of all the cases in which we have complete records and 92.7 per cent. of those which might be ascribed to the water supply. This proves pretty conclusively that our city water supply is the medium through which the contagion has been conveyed. Our investigations show that in the families in which these cases occurred, boiling or filtering the water was very rarely done. The milk supply has not, so far as could be discovered, been a factor in the causation of these cases.

The work of the chemical department for the two months has been confined largely to the examination of dairy products; 997 samples of milk and cream, and 38 of butter were analyzed. Much improvement was noted in the quality of these commodities, but 31 cases of milk and cream were referred to the police court for prosecution, a little over 3 per cent. of the total number examined. Of the 38 samples of butter only one was found to be

oleomargarine, the rest being genuine butter, although many of them were so-called "renovated" or "process" butter. Of lard 38 samples were examined, of which 7 were found adulterated, being mostly cheap imitations of lard which pass under the name of "compound."

Of 9 samples of vanilla extract 3 were the so-called "compound," being merely watery solutions of coumarin colored with caramel. Of 54 samples of cider only 3 were found adulterated, the adulterant being salicylic acid, which is used as a preservative. There has been a greater improvement in the quality of cider sold this year than in any previous year, there being very little, if any, strictly chemically manufactured cider on the market.

For the sale of adulterated foods within the meaning of the law, prosecutions were instituted in 41 cases. When it is considered that during this time 1152 specimens exclusive of water were examined it will be seen that the percentage is comparatively low.

Samples of water examined, 57; 32 were obtained from as many wells, located in one of the suburbs of the city; 23 of these were badly contaminated; 4 were very suspicious and 5 only found to be fit for drinking purposes.

W. C. WOODWARD.

Dr. Lorenz.—The visit of the distinguished Austrian surgeon, Dr. Adolf Lorenz, to this city for three days in December last will long be remembered by every physician here and particularly by those who were privileged to witness his skill in the manipulation and reduction of deformed members. He had been in this country some time before reaching Washington, and of course the newspapers and medical journals had duly advertised him. For this reason the medical fraternity here were especially desirous of seeing him and learning for themselves what manner of man he was. On the afternoon of December 5 the amphitheater at Providence Hospital was taxed to its full capacity; never before in the history of Washington had so many physicians come together to witness a clinical demonstration. From the moment Professor Lorenz entered the operating room and began in his modest way to explain his famous bloodless method of surgery until he completed the two operations—one for congenital dislocation of the hip, the other for an extreme form of club foot—the most marked interest and attention were shown him. Certainly, if a skeptic was there his doubts were overcome before he left. While watching the master hand in the various steps of the operations, all were impressed that he understood thoroughly what he was doing and that he could do more than he could tell, or demonstrate to others how to do. This is shown by his having made reductions of hips in the shortest time, after his trained assistants had made prolonged attempts and failed. His trip to this country may be considered an epoch in orthopedic surgery, and his work here will doubtless stimulate American surgeons to a more faithful trial of manipula-

tive measures before resorting to the use of the knife. Much credit should also be given to Dr. Mueller, his assistant, for his skill in the use of plaster of Paris; his application of it was certainly an artistic piece of work.

V. B. JACKSON.

Review.

THE MATTISON METHOD IN MORPHINISM: A MODERN AND HUMANE TREATMENT IN THE MORPHIN DISEASE. By J. B. Mattison, M.D. E. B. Treat & Co., New York, 1902. Pp. 40. \$1.00.

But for the fact that the author informs us in his "Foreword," that "this monograph is the outcome of thirty years' experience in the study and treatment of the Morphin disease," we would feel inclined to criticise severely his apparent presumption in speaking of his method, in the very beginning of the work, as follows: "The author offers his own method . . . one original and successful, and which after large experience he makes bold to say is in advance of any mode of treatment yet presented."

After conscientiously reading the little work through, however, we feel it our duty to state that the method AS SET FORTH is both original and practical. It consists in producing a certain degree of nervous sedation and consequent control of reflex irritation by means of the bromides. Sodium bromide, codein and trional are the principal remedies used. Only such cases as have an earnest desire to recover are accepted for treatment.

While in the main we agree with this method of treatment, it is our opinion that too little importance is attached to the question of *elimination*. It would seem to be the general belief among those who treat this disease exclusively that elimination (by means of cathartics suited to each individual case) will prevent complications and shorten the time for medication.

Based upon common sense, this method of treating morphinism which is indeed humane should become popular.

WM. L. ROBINS.

HOW TO SUCCEED IN THE PRACTICE OF MEDICINE. By JOSEPH McDOWELL MATHEWS, M. D., LL. D. Louisville, John P. Morton & Co.

Numerous works have been published purporting to teach young men how to get along in their profession, but it is seldom that the author has been so distinguished a man, or one who has

in such a high degree made a success of his own career as in the case of the work before us. When a man like Dr. Mathews, once president of the American Medical Association, and for many years prominent as a teacher and author, undertakes to give for the benefit of others the results of his more than twenty-five years of rich and useful experience, we cannot afford to miss the opportunity of learning what he has to say.

The book is not, as one might suspect from the title, a tedious aggregation of rules instructing us how to behave towards our patients nor is it a long and dry homily containing a lot of superfluous advice on moral questions, but it is rather a very entertaining "heart-to-heart" talk on all sorts of topics in which every practitioner is vitally interested, and set down in such light, readable style, illustrated with so many pleasing anecdotes, and dressed in such elegant phraseology, that no one who once takes it up to read will ever quit until he has gone from cover to cover.

The following are the titles of the chapters: I, Requirements for Entering the Medical Profession; II, Location; III, Marriage; IV, Ethics; V, The First Year; VI, Specialties in Medicine; VII, The Business Side of it; VIII, The Young versus the Old Doctor; IX, The Country versus the City Doctor; X, Art in Medicine; XI, Some Rare Types that you will meet; XII, Lights and Shadows. To get a still nearer idea of the nature of the context we give the subheadings of chapter V, entitled *The First Year*, which are as follows: Justice; The Poor; Treatment of other Doctors; Gossip; Sarcasm; Secrets; "The Clock"; The First Call; Pulling the First Tooth; The Old Maid; An Hour of Sorrow; The Hypocrit; Consultation; "Society".

As can readily be guessed from these headings, the book abounds in delightful little pictures that belong especially to the life of the physician, and they have been sketched with a master hand. But not only do we commend this work because it is interesting, because it is instructive and because it is profitable—all of which qualifications it undoubtedly has—but, for more than any other reason, because the author has adopted a high moral tone throughout, and has succeeded in keeping before his readers only those true and noble ideals to which every right-minded physician should aspire.

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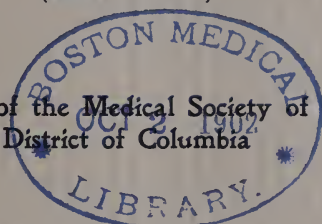
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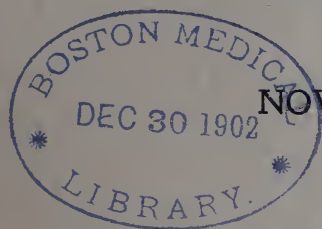
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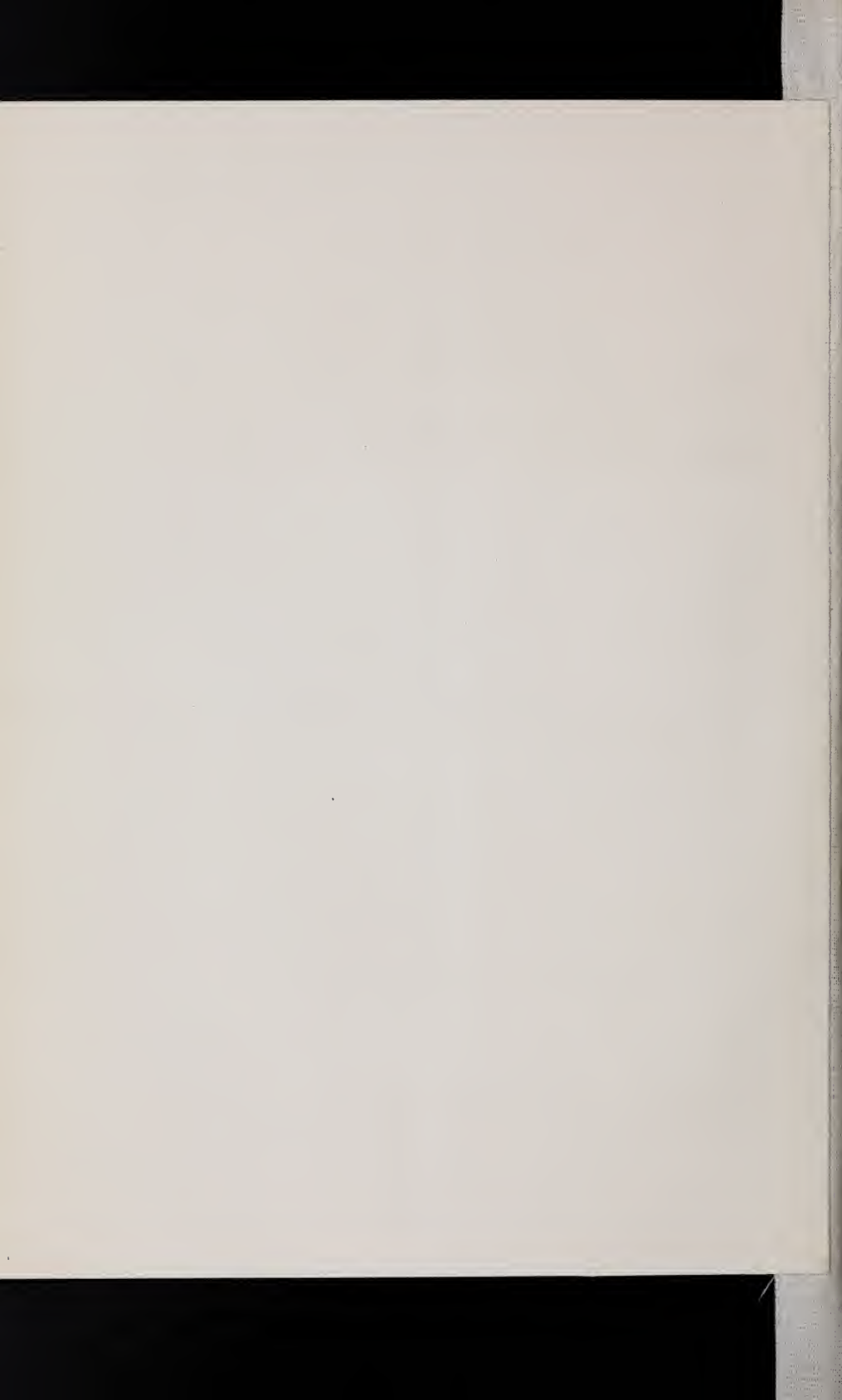
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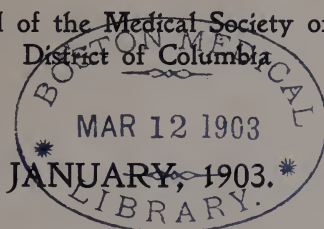
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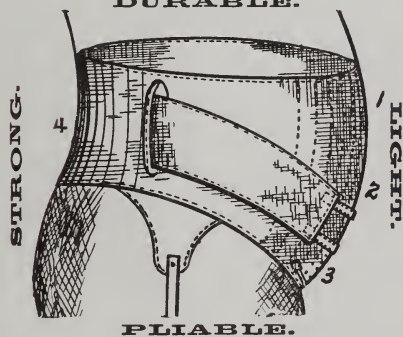
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